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Aeropropulsive Characteristics of Twin Nonaxisymmetric Vectoring Nozzles Installed With Forward-Swept and Aft-Swept Wings

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SUMMARY

An investigation was conducted in the Langley 16-Foot Transonic Tunnel to determine the aeropropulsive characteristics of a single expansion ramp nozzle (SERN) and a two-dimensional convergent-divergent nozzle (2-D C-D) installed with both an aft-swept and a forward-swept wing. The SERN was tested in both an upright and an inverted position (external ramp on top and bottom, respectively). The effects of thrust vectoring at nozzle vector angles from -5° to 20° were studied. This investigation was conducted at Mach numbers from 0.40 to 1.20 and angles of attack from -2.0° to 16°. Nozzle pressure ratio was varied from 1.0 (jet off) to about 9.0. Reynolds number based on the wing mean geometric chord varied from about 3.0×10^6 to 4.8×10^6, depending upon free-stream Mach number.

At subsonic speeds, the power-off minimum drag characteristics for both the aft- and forward-swept wings installed with either nozzle were nearly equal. However, the angle of attack for onset of flow separation on the forward-swept wing was about 2° lower than for the aft-swept wing. Consequently, the forward-swept wing had much higher jet-off drag at typical maneuver lift coefficients. Power-on drag-minus-thrust characteristics were similar to those for power off. With power off inverted SERN had higher lift at 0° angle of attack for all nozzle vector angles and better polar characteristics at high lift than the upright SERN. These improved jet-off characteristics apparently resulted from a change in the effective camber of the afterbody/nozzle. Drag-minus-thrust performance for the configuration with the inverted SERN was better than that with the upright SERN because of higher internal performance of the nozzles. The configuration with the 2-D C-D nozzle had the best drag-minus-thrust performance at low lift for both wing sweeps at afterburner power conditions. With the aft-swept wing, the configuration with the inverted SERN had superior performance at maneuver lift conditions.

INTRODUCTION

The mission requirements for the next generation of fighter aircraft are expected to result in a highly versatile vehicle capable of operating over a wide range of flight conditions. These aircraft will most likely be designed for high maneuverability and agility, will operate in an extremely hostile environment, and will possess STOL landing characteristics necessary to operate from bomb-damaged airfields.

At present, several advanced technologies are being developed in an effort to improve aircraft maneuverability. These include improved wing design, variable camber, forward wing sweep, high-lift devices, close-coupled canards, reduced static margin, aeroelastic tailoring, and integrated controls. In addition, research has been conducted on both conceptual and practical aircraft configurations in which the powerplant is integrated to take advantage of the potential benefits of propulsion-induced aerodynamics to improve not only cruise

efficiency but also maneuvering performance. Propulsive-lift schemes - such as primary thrust vectoring and upper surface blowing - that benefit from supercirculation effects induced by exhaust flow deflection have been studied (ref. 1).

The nonaxisymmetric nozzle installed on advanced aircraft may offer the designer the opportunity to satisfy many different mission requirements. Recent studies (refs. 2 to 4) have identified potential payoffs for nonaxisymmetric nozzles in improved integration for installed drag reduction, thrust vectoring for maneuver enhancement and short field take-off and landing, and thrust reversing for improved agility and ground handling. Some improvements in the aircraft's stealth characteristics may be possible through a reduction of nozzle infrared signature and radar cross section by variations of nozzle orientation.

This paper presents the results of an investigation which combined two of the aforementioned technologies, namely, forward wing sweep and nonaxisymmetric nozzles. The aeropropulsive characteristics of an installed single expansion ramp nozzle and one of the two-dimensional convergent-divergent nozzles of reference 5 were determined for a wing-body configuration with both an aft-swept and a forward-swept wing. Since the infrared radiation signature of nonaxisymmetric nozzles can be highly directional (ref. 4), nozzle orientation could be an important stealth design parameter for future tactical aircraft. Therefore, the single expansion ramp nozzle was also tested in an inverted position; that is, the external ramp was located on the bottom of the configuration.

The present investigation was conducted in the Langley 16-Foot Transonic Tunnel at Mach numbers from 0.40 to 1.20, angles of attack from -2.0° to 16°, and nozzle pressure ratios from 1.0 (jet off) to 9.0. Reynolds number based on the wing mean geometric chord varied from 3.0×10^6 to 4.8×10^6, depending on free-stream Mach number.

SYMBOLS

Model forces and moments are referred to the stability-axis system with the model moment reference center located at 0.25c for each of the wings tested. A discussion of the data-reduction procedure and definitions of the aerodynamic force and moment terms and the propulsion relationships used herein are presented in appendix A.

A_e nozzle-exit area, cm^2

A_{max} model maximum cross-sectional area, 284.78 cm^2

$A_{mb,2}$ model cross-sectional area at FS 132.08, cm^2

A_t nozzle-throat area, cm^2

$A_{seal,1}$ cross-sectional area enclosed by seal strip at FS 99.06, cm^2

$A_{seal,2}$ cross-sectional area enclosed by seal strip at FS 132.08, cm^2

$C_{D,a}$ wing-body aerodynamic drag coefficient, $\frac{D_a}{q_\infty S}$

$(C_{D,a})_0$ drag coefficient at $C_{L,a} = 0$

$C_{(D_n-F)}$ nozzle drag-minus-thrust coefficient, $\frac{D_n - F}{q_\infty S}$

$C_{(D-F)}$ drag-minus-thrust coefficient, $\frac{D - F}{q_\infty S}$

$C_{(D-F),0}$ drag-minus-thrust coefficient at $C_L = 0$

C_L total lift coefficient (including thrust component), $\frac{\text{Lift}}{q_\infty S}$

$C_{L,0}$ C_L at $\alpha = 0^\circ$

$C_{L,a}$ aerodynamic lift coefficient, $\frac{\text{Aerodynamic lift}}{q_\infty S}$

$(C_{L,a})_0$ $C_{L,a}$ at $\alpha = 0^\circ$

$C_{L,n}$ nozzle lift coefficient (including thrust component), $\frac{\text{Nozzle lift}}{q_\infty S}$

$(C_{L,n})_0$ $C_{L,n}$ at $\alpha = 0^\circ$

C_m total pitching-moment coefficient (including thrust component), $\frac{\text{Total pitching moment}}{q_\infty S\bar{c}}$

$C_{m,a}$ aerodynamic pitching-moment coefficient, $\frac{\text{Aerodynamic pitching moment}}{q_\infty S\bar{c}}$

$C_{m,n}$ nozzle pitching-moment coefficient (including thrust component), $\frac{\text{Nozzle pitching moment}}{q_\infty S\bar{c}}$

$\bar{c}$ wing mean geometric chord, 35.37 cm

D drag, N

D_a wing-body drag ($D - D_n$), N

D_n nozzle drag, N

F thrust along stability axis, N

F_A model axial force, N

$F_{A,n}$ nozzle axial force, N

$F_{A,Mbal}$ axial force measured by main balance, N

$F_{A,Tbal}$ axial force measured by thrust balance, N

$F_{A,mom}$ momentum tare axial force due to bellows, N

F_g gross thrust, $\sqrt{F_j^2 + F_{N,j}^2}$, N

F_i ideal isentropic gross thrust, N

F_j thrust along body axis, N

$F_{N,j}$ jet normal force, N

$(L_a/D_a)_{max}$ thrust-removed maximum lift-drag ratio

M free-stream Mach number

$\dot{m}_p$ measured mass-flow rate, kg/sec

p_a ambient pressure, Pa

$\bar{p}_{es,1}$ average static pressure at external seal at FS 99.06 cm, Pa

$\bar{p}_{es,2}$ average static pressure at external seal at FS 132.08 cm, Pa

$\bar{p}_i$ average internal static pressure, Pa

p_∞ free-stream static pressure, Pa

$p_{t,j}$ average jet total pressure, Pa

q_∞ free-stream dynamic pressure, Pa

R gas constant (for $\gamma = 1.3997$), 287.3 J/kg-K

S wing reference area, 2930.44 cm^2

$T_{t,j}$ jet total temperature, K

x_e, y_e coordinates of nozzle exit, cm

x_t, y_t coordinates of nozzle throat, cm

α angle of attack, deg

γ ratio of specific heats, 1.3997 for air

Δ increment

δ effective jet turning angle, $\tan^{-1} \frac{F_{N,j}}{F_j}$, deg

δ_v geometric turning angle (positive direction deflects jet flow downward), deg

Abbreviations:

A/B afterburner

ASME American Society of Mechanical Engineers

C-D convergent-divergent

DPR design pressure ratio

FS fuselage station

max maximum

NPR nozzle pressure ratio, $p_{t,j}/p_\infty$ or $p_{t,j}/p_a$

SERN single expansion ramp nozzle

2-D two-dimensional

VEER variable external expansion ramp

APPARATUS AND PROCEDURE

Model

General arrangement.- Photographs of the model are shown in figure 1. The overall external geometry of the model is presented in figure 2.

The fuselage had rectangular cross sections with rounded corners and had an effective fineness ratio of 7.42. The body lines were chosen in order to enclose the internal propulsion system and to fair into the afterbody enclosing the nozzles. The maximum width and height of the body were 22.86 cm and 12.7 cm, respectively, and the maximum body cross-sectional area was 284.78 cm^2. A 0.16-cm annular gap between the forebody and afterbody at FS 99.06 was required to prevent fouling between the nonmetric and metric portions of the

model (measured by the main balance). A flexible Teflon strip inserted into slots was used as a seal to prevent internal flow in the model. The low coefficient of friction of Teflon minimized restraint between the metric and nonmetric portions of the model. Only that portion of the configuration aft of the metric break, at fuselage station 99.06 cm, was supported by the main-force balance; hereinafter, that portion is referred to as the wind-tunnel model. The second metric break for the thrust balance, indicated in figure 2, was sealed in a manner similar to that for the main balance.

Basic aft-swept wing.- The basic wing, shown in figure 3, had a planform representative of a tactical fighter wing design and was the same wing used in the investigation of reference 6. The wing had a leading-edge sweep of 45°, an aspect ratio of 2.9, a reference area of 2930.44 cm^2, and a mean geometric chord of 35.37 cm. The airfoil sections on the wing were an NACA 64A004.25 section at the trailing-edge break and an NACA 64A003 section at the tip. The wing had no twist or dihedral.

The wing was sized to provide a realistic exposed wing area relative to both the body maximum cross-sectional area and the nozzle throat areas, within limitations imposed by maximum load considerations. This criterion resulted in a ratio of exposed wing area to maximum cross-sectional area of 6.6, compared to a value of 7.3 for the F-15 airplane. The wing was located longitudinally to align the nominal internal exit plane of all nozzles with the wing trailing edge. The vertical location of the wing was at the model center line. This wing location was selected to maximize interactions between the wing and the nozzle.

Forward-swept wing.- The planform of the forward-swept wing is also shown in figure 3. This wing has the same aspect ratio, taper ratio, reference area, and mean geometric chord as the aft-swept wing and was obtained by sweeping the leading edge forward to 15°. The airfoil section was an NACA 64A003.5, and the wing had no twist or dihedral. The theoretical root chord of the forward-swept wing was shifted aft as shown in figure 3 in order that the trailing edge of the exposed root chord would be at the same fuselage station as that for the basic wing.

Twin-Jet Propulsion Simulation System

A sketch of the twin-jet propulsion simulation system is presented in figure 4. This propulsion simulation system was also used for the investigations described in references 1, 5, and 6. An external high-pressure air system provides a continuous flow of clean, dry air at a controlled temperature of about 306 K at the nozzle. This high-pressure air is brought through the support strut by six tubes into a high-pressure chamber. (See fig. 4.) Here, the air is divided into two separate flows and is passed through flow-control valves. These manually operated valves are used to balance the exhaust-nozzle total pressure in each duct. As shown in figure 5, the air in each supply pipe is then discharged perpendicularly to the model axis through eight sonic nozzles equally spaced around the supply pipe. This method is designed to eliminate any transfer of axial momentum as the air is passed from the nonmetric to metric portion of the model. Two flexible metal bellows are used as seals and serve

to compensate the axial forces caused by pressurization. The cavity between the supply pipe and bellows is vented to model internal pressure. The tailpipes are connected to the thrust balance whose loads are then transmitted to the main balance through the wing and thrust-balance support block. (See fig. 4.)

The air is then passed through the tailpipes to the exhaust nozzles, as shown in figure 4. A transition, instrumentation, and choke plate section common to all nozzles was attached to the tailpipes at FS 122.44 cm, with FS 132.08 cm being the nozzle connect station. The duct upstream of the nozzle throat was square. The nozzles had square corners in the duct downstream of the choke plate. A closely spaced buried engine installation was chosen for the nozzle integration scheme. The interfairing between the nozzles resulted from providing for remote actuation for thrust vectoring.

Nozzle Designs

Nozzle design criteria.- The nozzle designs were based on the following criteria. Nozzle-throat area and internal-expansion area ratios were sized to be consistent with advanced mixed-flow turbofan engine cycles. Three power settings and associated area ratios for each basic nozzle concept were provided. These simulated a dry power setting, a subsonic maximum afterburner (A/B) setting, and a supersonic afterburner (max A/B) setting (not tested). The ratio of total nozzle-throat area to body maximum cross-sectional area was also consistent with current twin-engine fighter airplanes. The nozzle geometric and sizing parameters are summarized in the following table:

Nozzle type	Power setting	A_t, cm^2	A_e/A_t	$2A_t/A_{max}$	Nominal operating NPR	DPR	Range of δ_v, deg
SERN	Dry	15.677	1.15	0.11	3.5	3.46	-24 to 28
SERN	A/B	27.032	1.21	.19	5.0	3.94	-24 to 28
2-D C-D	A/B	27.032	1.28	.19	5.0	4.49	0 to 20

Single expansion ramp nozzle.- The single expansion ramp nozzle (SERN) has a two-dimensional single expansion ramp which results in combined internal-external expansion. This concept, a derivative of the augmented deflector exhaust nozzle (ADEN) of reference 7, features elliptical throat and expansion surface contours. The nozzle tested is shown in the sketches of figure 6 and the photographs of figures 7 and 8.

In the model, the elliptical contours have been approximated by semicircular and straight-line segments. The throat area and the internal area ratio are set by an adjustable lower surface boattail flap and spacers to simulate rotation of the area control flap.

In the full-scale nozzle, the rotating lower flap is actually part of a swiveling pressure vessel with a continuous structure that proceeds up the sidewalls and through a pressurized cavity in the fixed-geometry upper expansion

ramp structure. This design innovation reduces actuation forces and maintains structurally efficient hoop stress in the throat area control flap. Thrust vectoring is accomplished by deflection of the variable external expansion ramp (VEER). The VEER was remotely actuated in the model. Tests were conducted with the entire nozzle assembly aft of FS 132.08 upright, as shown in figures 6 and 8(a), and inverted, as shown in figure 8(b).

Two-dimensional convergent-divergent nozzle.- Details and photographs of the 2-D C-D nozzle tested are shown in figures 9 and 10. This nozzle concept utilizes rotary-convergent flap actuation for jet area control and independent rotary actuation of the external boattail flaps for area ratio and vectoring control. The divergent flaps follow the boattail flaps through a sliding joint mechanism. (See ref. 5.) A cutback sidewall geometry was used to reduce nozzle weight and cooled surface area. A short divergent flap design was selected for this nozzle to minimize weight and cooling requirements. This nozzle is identified as 2-D C-D/1 in reference 5.

Wind Tunnel and Support System

This investigation was conducted in the Langley 16-Foot Transonic Tunnel, a single-return atmospheric wind tunnel with a slotted octagonal test section and continuous air exchange. The wind tunnel has continuously variable airspeed up to a Mach number of 1.30. Test-section plenum suction is used for speeds above a Mach number of 1.10. From the calibration of the wind tunnel, the test-section wall divergence is adjusted as a function of the airstream dewpoint and Mach number. The adjustment eliminates any longitudinal static-pressure gradients in the test section.

The model was supported by a sting strut with the model center of rotation indicated in figure 2. The strut had a 45° leading-edge sweep, a 50.8-cm chord, and a 5-percent-thick hexagonal airfoil in the streamwise direction. The model blockage ratio was 0.0015 (ratio of model cross-sectional area to test-section area), and the maximum blockage ratio including the support system was 0.0020. Strut interference effects were considered to be small.

Instrumentation

The main balance measured forces and moments resulting from nozzle gross thrust and the external flow field over that portion of the model aft of FS 99.06. The thrust balance measured forces and moments resulting from nozzle thrust and the external flow field over the nozzle boattail and interfairing aft of FS 132.08. Five pressure orifices located in each metric break (FS 99.06 and FS 132.08) were used to measure pressures for tare corrections to each balance. Internal cavity pressures were measured at four locations and are also used for these tares. Model attitude, relative to gravity, was measured by a calibrated attitude indicator mounted in the nose.

Mass-flow rate in each nozzle was determined from total-pressure and total-temperature measurements in the flow transfer assemblies (fig. 5). Total mass-flow rate (both nozzles) was also measured by a turbine flowmeter (external to

tunnel) and used as a backup to the flow transfer assembly measurements. Flow conditions in each nozzle were determined from four total-pressure probes and one total-temperature probe located at FS 129.5 in the instrumentation section aft of the transition section and choke plate. All pressures were measured with individual pressure transducers, and temperatures were measured with iron-constantan thermocouples. Since the choke plate and nozzle flow instrumentation were downstream of the round-to-rectangular duct transition section (see fig. 4), nozzle performance parameters were independent of duct transition effects.

As a check on the adequacy of the flow instrumentation, nozzle total-pressure surveys were made (ref. 5) by translating a shielded total-pressure probe (Kiel tube) across the flow duct in the instrumentation sections. These surveys were made at approximately the same fuselage station as the total-pressure probes that were installed in the instrumentation sections. Surveys were made along the nozzle horizontal and vertical planes. Both nozzle types were surveyed at each power setting in each duct in order to determine the effects of any geometrical differences in the nozzle throat on the total-pressure profiles at the measuring station. The numerically averaged total pressure from the total-pressure tubes in the instrumentation section was within 0.2 percent of the integrated value from the Kiel tube surveys.

All data for both the model and the wind-tunnel facility were recorded simultaneously on magnetic tape. Approximately 50 frames of data, taken at a rate of 10 frames per second, were used for each data point. Average values of the recorded data were used to compute standard force and moment coefficients based on wing area and mean geometric chord for reference area and length, respectively.

Tests

This investigation was conducted in the Langley 16-Foot Transonic Tunnel at Mach numbers from 0.40 to 1.20. Angle of attack was varied from -2.0° to 16.0°, depending upon Mach number; nozzle pressure ratio was varied from 1.0 (jet off) to 9.0, depending upon Mach number and nozzle power setting. Basic data were obtained by holding nozzle pressure ratio constant and varying angle of attack. Balance load limits on the main balance pitching moment restricted the maximum angle of attack for the configurations with the aft-swept wing at Mach numbers of 0.90 and 1.20. Reynolds number based on the wing mean geometric chord varied from about 3.0×10^6 to 4.8×10^6 at Mach numbers of 0.60 and 1.20, respectively.

All tests were conducted with 0.26-cm-wide boundary-layer transition strips consisting of No. 100 silicon carbide grit sparsely distributed in a thin film of lacquer. These strips were located 2.54 cm from the tip of the forebody nose and on both the upper and lower surfaces of the wings at 5 percent of the wing chord at the wing-fuselage juncture to 10 percent of the local streamwise chord at the wing tip.

PRESENTATION OF RESULTS

The results of this investigation are summarized in figures 11 to 26. Table I is an index to these figures. The basic results are presented in plotted form and in appendix B are tabulated as well. Table II is an index to the basic total and thrust-removed longitudinal aerodynamic characteristics presented in figures 27 to 74.

DISCUSSION

Effect of Wing Sweep

Power-off total aerodynamic characteristics.- The effects of wing sweep on the power-off total aerodynamic characteristics are summarized in figures 11 and 12 from the basic data at NPR = 1.0 in the group of figures from 27 to 36. Typically, for the aft-swept wings, the lift curves are nearly linear up to about $\alpha = 8^{\circ}$ at M = 0.60 and 0.90 and then break gradually, whereas for the forward-swept wing, the lift curves are linear up to only 6° and then break more sharply at M = 0.90. (See, for example, fig. 27(a) or 29(a).) This break in the lift curves indicates the onset of flow separation on the wing. Since flow separation first occurs for the aft-swept wing at a higher angle of attack and hence higher lift coefficient, this wing had lower drag $C_{(D-F)}$ at the higher lift coefficients. Note that at NPR = 1.0, thrust is equal to zero, and the term $C_{(D-F)}$ represents the total drag of the configuration. Included in this drag term is nozzle base drag, which is a pressure-area term and is equal to the product of the nozzle throat area and the difference between nozzle total pressure (at NPR = 1.0) and internal model cavity pressure.

Flow separation on the forward-swept wing most likely occurs initially inboard at the root rather than at the tip, where it would typically occur for aft-swept wings. The lift curve at M = 0.90 for the forward-swept wing (fig. 29(a)) indicates much more severe separation than for the aft-swept wing. This is probably caused by higher normal velocities that result from the lower wing sweep of the forward-swept wing. Further evidence of this flow separation can be seen by examining either the total or the thrust-removed pitching-moment coefficient. The effect of wing sweep on thrust-removed pitching-moment coefficient $C_{m,a}$ is presented in figure 47 for the configuration with the upright SERN nozzle at intermediate power and $\delta_v = 0^{\circ}$. These data are typical for all configurations. Note that the pitch-down for the forward-swept configuration at M = 0.60 and 0.90 occurs at the lift coefficient noted previously for the onset of flow separation on the wing.

At M = 1.20, the configuration with the forward-swept wing has a higher lift-curve slope and a higher zero-lift drag than the configuration with the aft-swept wing (fig. 32(a)). The latter result is to be expected, since the forward-swept wing would have higher wave drag because of the lower sweep.

The zero-lift drag characteristics $C_{(D-F),0}$ are summarized in figure 11 for all the configurations tested for $\delta_v = 0^{\circ}$ at NPR = 1.0. In general, the data show little or no effect of wing sweep on zero-lift drag characteristics except at M = 1.20.

A summary of jet-off drag at $C_L = 0.40$ is presented in figure 12. The data are summarized at this lift coefficient, since this is the value at approximately $\alpha = 8^o$, which is a typical maneuver angle of attack. The configuration with the aft-swept wing has lower drag at $C_L = 0.40$, except for the inverted SERN (VEER on bottom) at dry power and at $M = 0.90$. Unfortunately, there are no data for this configuration at the A/B power setting for $\delta_v > 0^o$; consequently, no assessment can be made at maneuver conditions because fighter aircraft usually maneuver with nozzles at afterburner power settings.

Power-on total aerodynamic characteristics.- The effects of wing sweep on the power-on total aerodynamic characteristics are summarized in figures 13 and 14 from the basic data at $NPR > 1.0$ in the group of figures from 27 to 36. The effect of wing sweep at power-on conditions resembles that already discussed at power-off conditions. The difference in drag-minus-thrust coefficient $\Delta C_{(D-F)}$ for the forward- and aft-swept wings from the data of figures 12 and 14 is presented in incremental form in figure 15. In general, figure 15 shows beneficial effects of both vector angle and power when the forward-swept wing is compared with the aft-swept wing (except for the SERN inverted, A/B power). That is, there is a decrease in $\Delta C_{(D-F)}$ as vector angle is increased at constant NPR, or when power is applied at constant δ_v.

Thrust-removed aerodynamic characteristics.- The effects of wing sweep on the thrust-removed aerodynamic characteristics which are summarized in figures 16 and 17 are also shown for selected configurations in figures 37 to 47. It should be noted that in addition to thrust, nozzle external lift and drag on that portion of the body aft of FS 132.08 (nozzle surface) were also removed from the total aerodynamic forces measured by the main balance. (See appendix A.)

Figure 16 indicates that zero-lift drag is generally lower for the configuration with the aft-swept wing. Maximum lift-drag ratio for the forward-swept wing, however, is higher than or equal to that for the aft-swept wing at subsonic Mach numbers. Drag characteristics at $C_{L,a} = 0.40$ (fig. 17) are similar to those already described for drag-minus-thrust coefficient, although increasing either NPR or δ_v tends to have more beneficial effects on the forward-swept wing than on the aft-swept wing.

Effect of Nozzle Orientation

Two distinct flow-turning mechanisms can be utilized by SERN type nozzles during vectored-thrust operation, depending upon nozzle orientation. For positive vectoring, the upright SERN (VEER up) achieves deflection of the flow through a supersonic shock, whereas for the inverted nozzle (VEER on bottom), supersonic expansion turning over the VEER is employed. As a result, the static nozzle performance and turning effectiveness are quite different and have a significant effect on performance at forward speeds.

Nozzle static performance.- Nozzle static performance (F_g/F_i) from reference 5 for the SERN at dry and A/B power settings is presented in figures 18 and 19, respectively. The static performance for the 2-D C-D nozzle is given in figure 20 in order to illustrate vectoring characteristics for a nozzle that

employs essentially subsonic exhaust flow turning. Note that for the investigation of reference 5, negative vectoring at static conditions is equivalent to positive vectoring of the inverted SERN (VEER on bottom) during the present investigation.

As expected, nozzle performance F_g/F_i for the SERN at $\delta_v = 0^o$ is characterized by two performance peaks typical of internal-external expansion nozzles (fig. 18(a)). These peaks occur at nozzle pressure ratios which are a function of the internal (at physical exit) and external (at end of VEER) area ratios.

Maximum internal performance for the upright SERN occurred at $\delta_v = -5^o$ with dry power and $\delta_v = -6^o$ with A/B power (ref. 5). The negative vector angles required for maximum internal performance eliminate an undesirable flow-decelerating interference with the exhaust expansion and provide effective overall area ratios which result in an increased exit momentum.

Nozzle vectoring performance is summarized in figure 21, where effective turning angle δ and an incremental performance parameter $\Delta F_g/F_i$ are shown as a function of the geometric turning angle δ_v. In general, the relative merit of the vectoring performance of a particular nozzle concept is strongly dependent upon the type of flow turning employed. For example, nozzles in which the flow is turned subsonically generally have the best overall performance. This is shown in figure 21, which indicates that the 2-D C-D nozzle at the A/B power setting has the best flow-turning performance and very small internal performance losses. The 2-D C-D nozzle also exhibits an increase ($\delta > \delta_v$) in effective turning which probably results from a pressure gradient between the upper and lower divergent flaps (creating a positive normal force). This pressure gradient, which is due to the large turning angle around the lower flap, causes an overexpansion that does not fully recompress on the lower divergent flap.

The upright, dry power SERN (with the VEER on top), on the other hand, exhibits an increase in turning effectiveness with increasing pressure ratio, but performance losses are as high as 7.5 percent. These performance losses are related to shock-induced momentum losses resulting from the supersonic flow-turning process and some sidewall spillage. Note that the effective turning angle can be larger than the geometric vector angle since it is the effective direction of the force vector produced by a combination of exit momentum and a pressure-area force experienced by the fixed and rotating external-expansion surfaces.

However, when the SERN is inverted and flow turning results from supersonic expansion, maximum static internal performance is generally obtained between effective turning angles of 5^o and 10^o. Generally, a sharp decrease in performance occurs as the flap vector angles exceed 16^o. At $\delta_v = 16^o$, the external ramp and vectoring flap form a continuous surface. When the vectoring flap is at angles between 16^o and 24^o, the flow must negotiate a convex corner and thereby tend to separate from the flap and cause a decrease in performance. The results shown in figure 21 indicate that turning effectiveness is generally greater for the upright SERN than for the inverted SERN. Consequently, less actuator travel would be required for a given effective turning angle.

Power-off aerodynamic characteristics.- The effects of nozzle orientation (VEER position) on power-off aerodynamic characteristics are summarized in figures 22 to 24; from the basic data at NPR = 1.0 in the group of figures from 48 to 65. Typical effects on lift at M = 0.60 and $\delta_v = 0^o$ can be seen in figure 48(b) where inverting the SERN results in an increase in lift at $\alpha = 0^o$ for the configuration with the aft-swept wing and the nozzle at A/B power. This comparison is made at $\delta_v = 0^o$ because deflection of the VEER for the two test nozzle orientations results in two different aerodynamic flap configurations. At M = 0.90 and 1.20, small differences in lift-curve slope may also occur between the upright and inverted SERN, depending upon Mach number (figs. 50(b) and 53(b)). The effect of nozzle orientation on the various lift parameters at $\alpha = 0^o$ and $\delta_v = 0^o$ are summarized in figure 22. Note that the largest incremental change in $C_{L,0}$ resulting from inverting the SERN occurs for either wing sweep at M = 0.60. The maximum incremental change in $C_{L,0}$ of 0.068 occurs at M = 0.60 with the aft-swept wing and the nozzle in the dry power position. This increase in $C_{L,0}$ is caused by a change in the effective camber of the afterbody/nozzle when the nozzle orientation is rotated 180°. With the VEER on top, the afterbody/nozzle has negative camber (upsweep of mean line with respect to body axis) and, hence, negative values of $C_{L,0}$. With the VEER on bottom (inverted SERN), the afterbody/nozzle has positive camber. This change in effective camber is caused by both the nozzle interfairing (between nozzles) and the nozzle flaps at dry power as the low boattail flap rotates to its most closed position. (See fig. 6.) At the A/B power setting, the effective camber is not as great as for the dry power setting, and the $C_{L,0}$ increments resulting from nozzle orientation are much smaller.

As would be expected, there is little or no effect on zero-lift drag at $\delta_v = 0^o$ and power off (NPR = 1.0), as shown in figure 23. However for $M \leq 0.90$, as vector angle increases, there is not only an increase in $\Delta C_{(D-F),0}$, but also an increase in $C_{L,0}$ (e.g., compare parts of fig. 50), indicating that the inverted SERN with the VEER on bottom has different performance characteristics as an aerodynamic flap system than the nozzle with the VEER on top. The increase in $C_{L,0}$ at $\delta > 0^o$ probably results from the positive effective camber of the afterbody/nozzle.

The effect of both nozzle orientation and wing sweep on the incremental drag-minus-thrust coefficient $\Delta C_{(D-F)}$ at $C_L = 0.40$ is presented in figure 24. At M = 0.60, the inverted nozzle with the VEER on bottom has lower drag (negative values of $\Delta C_{(D-F)}$) for both wing sweeps at $C_L = 0.40$. This is probably caused by the change in effective camber resulting from inverting the SERN. However, there are strong Mach number effects, as indicated by both the levels and effect of wing sweep on $\Delta C_{(D-F)}$ as Mach number is increased from 0.60 to 0.90.

The most significant Mach number effect occurs as Mach number is increased from 0.60 to 0.90 for the forward-swept wing and the nozzle at dry power. There is a decrease of 0.0200 in drag coefficient as Mach number is increased from 0.60 to 0.90 for the inverted SERN (fig. 24) at $\delta_v = 0^o$, and the difference in drag coefficient between the two wing sweeps is increased from 0.0050 to 0.0300. Examination of the basic lift characteristics does indicate some overall effects due to variation of wing sweep with the SERN at dry power.

The effect of nozzle orientation on total lift for the aft-swept wing at $\delta_v = 0^o$ and $M = 0.90$ is shown in figure 57(b). Note that the lift-curve slope is somewhat higher with the inverted SERN. Both lift curves are nearly linear up to $\alpha = 8^o$ and have a small change in slope at $\alpha > 8^o$. As a result, both drag polars are essentially the same. However, figure 64(b) shows that when the wing is swept forward and the nozzle is upright (VEER on top), the lift curve is linear up to $\alpha = 6^o$, whereas with the inverted nozzle, linearity is maintained to nearly $\alpha = 8^o$. These results indicate that the flow over the forward-swept wing is separating at a lower angle of attack with the upright SERN (VEER on top).

This apparent difference in the wing separation characteristics caused by nozzle orientation on the forward-swept wing is probably attributable to a difference in the interaction between shock waves on the wing and the afterbody/nozzle. For the aft-swept wing, the wing shock near the wing trailing edge would be stronger because of the lower sweep angle of the shock when compared with the forward-swept wing. Consequently, the shock probably dominates the overall flow conditions of the entire configuration at $M = 0.90$. Thus, inverting the SERN has little effect on overall drag at $M = 0.90$, as indicated in figure 57(b). Conversely, the afterbody/nozzle shock may be stronger than the forward-swept wing shock and, hence, exert more of an influence over the wing.

Power-on aerodynamic characteristics.- The effects of nozzle orientation on the power-on aerodynamic characteristics are summarized in figures 23 and 24 from the basic data at NPR > 1.0 in the group of figures from 48 to 53. In general, these results show little or no effect of nozzle orientation on drag-minus-thrust performance at $C_L = 0$ and $\delta_v = 0^o$ (fig. 23). At $\delta_v > 0^o$, the inverted nozzle with the VEER on the bottom exhibits better performance (more negative $\Delta C_{(D-F),0}$) than the upright nozzle. These improvements in performance at $C_L = 0$ are due mainly to better nozzle internal performance at vectored conditions with the inverted SERN, as shown previously in figure 21. This improvement can also be seen by examining the thrust-removed drag increment $\Delta(C_{D,a})_{,0}$ shown at the top of figure 23 where the effect of thrust is subtracted from the aerodynamic characteristics. As indicated in figure 23, nozzle orientation has little or no effect on aerodynamic drag coefficient at any zero-lift test condition; thus, any variation in $\Delta C_{(D-F),0}$ at vectored conditions must result from differences in nozzle internal performance (thrust).

At $C_L = 0.40$, the inverted nozzle (VEER on the bottom) generally displays better drag-minus-thrust characteristics than the upright nozzle (VEER on top), except for the aft-swept wing at $M = 0.90$ with power off.

The previous discussion of variations in the performance of the upright and the inverted SERN was based on geometric vector angles. Since the effective turning angle δ varied significantly with nozzle orientation, different conclusions might be reached if the various summary aerodynamic parameters were shown as a function of δ rather than δ_v.

Effect of Thrust Vectoring

The effects of thrust vectoring on the aerodynamic characteristics for selected configurations are presented in figures 70 to 74. As thrust-vector angle increases at subsonic Mach numbers, there is the typical "crossover" of the individual drag-minus-thrust polars, with these crossovers occurring at successively higher lift coefficients. (See, for example, fig. 71(a) or 72(c).) This results in significant subsonic polar improvement, particularly at angles of attack above that for the onset of wing separation, which is between 6° and 8° for the two wings tested. At $M = 1.20$, increases in vector angle result in small increases in lift but no polar improvement (fig. 72(d)). Thus, a vector-angle schedule as a function of angle of attack could be developed to give an envelope polar for a given Mach number and nozzle pressure ratio. Envelope polars for the nozzles at A/B power from the current investigation are presented in figure 25. It can be seen that the 2-D C-D nozzle configuration has better drag-minus-thrust performance at low lift because of its higher nozzle internal performance levels. At high lift with the aft-swept wing, the inverted SERN (VEER on the bottom) has the highest performance.

The effects of SERN orientation on total configuration vectoring characteristics can be seen by comparing figures 70 and 71. With the upright SERN (fig. 70(a)), a nearly linear increase occurs in lift coefficient as vector angle is increased at a constant angle of attack. However, with the inverted SERN, little or no additional lift is generated as vector angle is increased from 10° to 20°. (See fig. 71(a) or 71(c).) As a result, there are no further drag-minus-thrust polar improvements. This loss of lift with the inverted SERN is attributed to internal flow separation at geometric vector angles greater than 15° to 16°, and was previously noted for static conditions (fig. 21).

Incremental lift characteristics for the SERN at both power settings and at two angles of attack are summarized in figure 26. Incremental lift is simply the difference between jet-on and jet-off total lift and is the sum of both the jet lift and jet-induced supercirculation lift. These results indicate that the incremental lift produced by vectoring is greater for the upright SERN (VEER on top). With this nozzle orientation, the incremental lift is as much as 3 times greater than that obtained on the inverted SERN (VEER on bottom).

SUMMARY OF RESULTS

An investigation has been conducted in the Langley 16-Foot Transonic Tunnel to determine the aeropropulsive characteristics of a single expansion ramp nozzle (SERN) and a two-dimensional convergent-divergent nozzle (2-D C-D) installed with both an aft-swept and a forward-swept wing. The SERN was tested with the nozzle both upright and inverted (external ramp on top and bottom, respectively). The effects of thrust vectoring at nozzle vector angles from -5° to 20° were studied. This investigation was conducted at Mach numbers from 0.40 to 1.20 over an angle-of-attack range from -2.0° to 16°. Nozzle pressure ratio was varied from 1.0 (jet off) to about 9.0. Reynolds number based on the wing mean geometric chord varied from about 3.0×10^{6} to 4.8×10^{6}. The following results were obtained from this study:

1. At subsonic speeds, the power-off minimum drag characteristics for both the aft- and forward-swept wings installed with either nozzle were nearly equal. However, the angle of attack for onset of flow separation on the forward-swept wing was about 2° lower than for the aft-swept wing. Consequently, the forward-swept wing had much higher jet-off drag at typical maneuver lift coefficients.

2. Power-on drag-minus-thrust characteristics were similar to those for power off. However, propulsion-induced effects from either increasing nozzle pressure ratio or nozzle thrust vector angle were more beneficial on the forward-swept wing configuration.

3. The configuration with the inverted SERN and with power off had higher lift at an angle of attack of 0° for all nozzle vector angles and had better polar characteristics at high lift than the upright (external ramp on top) SERN. These improved jet-off characteristics apparently resulted from a change in the effective camber of the afterbody/nozzle.

4. Drag-minus-thrust performance for the configuration with the inverted SERN was better than that for the upright SERN because of higher internal performance of the nozzle.

5. Although the inverted SERN had poorer incremental lift at a nozzle vector angle of 20°, its drag-minus-thrust performance was improved over that of the upright SERN because of better jet-off characteristics and higher internal nozzle performance.

6. Of the nozzles considered, the configuration with the 2-D C-D nozzle had the best drag-minus-thrust performance at low lift for both wing sweeps at afterburner power conditions. With the aft-swept wing, the configuration with the inverted SERN had superior performance at maneuver lift conditions.

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APPENDIX A

DATA REDUCTION AND CALIBRATION PROCEDURE

Calibration Procedure

The main balance measured the combined forces and moments due to nozzle gross thrust and the external flow field of that portion of the model aft of FS 99.06. The thrust balance measured forces and moments due to the nozzle gross thrust and the external flow field exerted over the nozzle boattail and interfairing aft of FS 132.08. Because the center lines of the force balances are located above and below the jet center line (fig. 4), force and moment interactions exist between the bellows-flow transfer system (fig. 5) and the force balances.

Consequently, single and combined calibration loadings of normal and axial force and pitching moment were made with the completely assembled model installed in the tunnel. In addition, with wedge nozzle 1 of reference 5 installed, loads were applied to the model with the jet operating. This wedge nozzle was used instead of the ASME-type calibration nozzles used previously (refs. 5 and 8) because of the availability of a calibration fixture upon which loadings could be made separately to each balance with the model fully assembled. Use of the ASME-type nozzles would have necessitated complete disassembly of the model, which could have altered some of the calibration results. The calibration results with the wedge nozzle agreed with previous data to within 1/2 percent on sonic nozzle discharge coefficient (see fig. 5) and within force balance accuracy on forces and moments.

The calibrations were performed with the jets operating because this condition gives a more realistic effect of pressurizing the bellows than does capping off the nozzles and pressurizing the flow system. However, loadings were also performed in the axial-force direction with the flow system capped off and pressurized; this method indicated no effect on the axial force measured by the main balance. Thus, in addition to the usual balance-interaction corrections applied for a single force balance under combined loads, another set of interactions were applied to the data from this investigation to simulate the combined loading effect of the balance with the bellows system. These calibrations were performed over a range of expected normal force and pitching moment. The interactions can be determined by either single or combined loadings.

Data Adjustments

In order to achieve desired axial-force-minus-thrust terms, the axial forces measured by both force balances must also be corrected for pressure-area tare forces acting on the model and for momentum tare forces caused by flow in the bellows. The external-seal and internal pressure forces on the model were obtained by multiplying the difference between the average pressure

(external seal or internal pressures) and free-stream static pressure by the affected projected area normal to the model axis. The momentum tare force was determined from calibrations made with the wedge nozzle prior to the wind-tunnel investigation.

Axial force minus thrust was computed from the main-balance axial force from the following relationship:

$$F_A - F_j = F_{A,Mbal} + (\bar{p}_{es,1} - p_\infty)(A_{max} - A_{seal,1}) + (\bar{p}_i - p_\infty)A_{seal,1} - F_{A,mom} \quad (A1)$$

where $F_{A,Mbal}$ includes all pressure and viscous forces, internal and external, on both the afterbody and thrust system. The second and third terms account for the forward-seal-rim and interior pressure forces, respectively. In terms of an axial-force coefficient, the second term ranges from -0.0001 to -0.0007, and the third term varies ±0.0075, depending upon Mach number and pressure ratio. The internal pressure at any given set of test conditions was uniform throughout the inside of the model, thus indicating no flow. The momentum tare force $F_{A,mom}$ is a momentum tare correction with jets operating, and is a function of the average bellows internal pressure, which is a function of the internal chamber pressure in the supply pipes just ahead of the sonic nozzles (fig. 5). Although the bellows were designed to minimize momentum and pressurization tares, small bellows tares still exist with the jet on. These tares result from small pressure differences between the ends of the bellows when internal velocities are high and from small differences in the forward and aft bellows spring constants when the bellows are pressurized.

Nozzle axial force minus thrust is computed from a similar relationship:

$$F_{A,n} - F_j = F_{A,Tbal} + (\bar{p}_{es,2} - p_\infty)(A_{mb,2} - A_{seal,2}) + (\bar{p}_i - p_\infty)A_{seal,2} + F_{A,mom} \quad (A2)$$

where $F_{A,Tbal}$ includes nozzle thrust and the internal pressure forces acting on the thrust system.

Since both balances are offset from the model center line, similar adjustments are made to the pitching moments measured by both balances. These adjustments are necessary because the forces due to both the pressure area and the bellows momentum tare are assumed to act along the model center line. The pitching-moment tare is determined by multiplying the tare force by the appropriate moment arm and subtracting the resulting value from the measured pitching moments.

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Model Attitude

The adjusted forces and moments measured by both balances are transferred from the body axis (which lies in the wing-chord plane) of the metric portion of the model to the stability axis. Attitude of the nonmetric forebody relative to gravity was determined from a calibrated attitude indicator located in the model nose. Angle of attack α, which is the angle between the afterbody center line and the relative wind, was determined by applying terms for afterbody deflection, caused when the model and balance bend under aerodynamic load, and a flow angularity term to the angle measured by the attitude indicator. The flow angularity adjustment was 0.1°, which is the average angle measured in the Langley 16-Foot Transonic Tunnel.

Thrust-Removed Characteristics

The resulting force and moment coefficients from the main balance include total lift coefficient C_L, drag-minus-thrust coefficient $C_{(D-F)}$, and total pitching-moment coefficient C_m. Force and moment coefficients from the thrust balance are nozzle lift coefficient, which includes the thrust component $C_{L,n}$; nozzle drag-minus-thrust coefficient $C_{(D_n-F)}$; and nozzle pitching moment $C_{m,n}$.

Thrust-removed coefficients for the wing-body are obtained by simply combining the results as follows:

$$C_{L,a} = C_L - C_{L,n}$$

$$C_{D,a} = C_{(D-F)} - C_{(D_n-F)}$$

$$C_{m,a} = C_m - C_{m,n}$$

The external aerodynamic forces on the nozzle (aft of FS 132.08) are also removed by this method.

Nozzle Performance

From the measured axial and normal components of the jet resultant force, determined at static conditions for each vectored nozzle configuration, the nozzle gross thrust and effective jet-turning angle are defined, respectively, as

$$F_g = \sqrt{F_j^2 + F_{N,j}^2}$$

and

$$\delta = \tan^{-1} (F_{N,j}/F_j)$$

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The ideal isentropic gross thrust of each nozzle can also be determined if the mass-flow rate for each nozzle is known. The effective discharge coefficients (refs. 5 and 8) of the eight sonic nozzles (see fig. 5) forward of each of the nozzle tail pipes are determined and used for measuring mass flow.

The total ideal isentropic gross thrust or exhaust jet momentum for both nozzles is

$$F_i = \dot{m}_p \sqrt{RT_{t,j} \frac{2\gamma}{\gamma - 1} \left[1 - \left(\frac{p_\infty}{p_{t,j}} \right)^{\frac{\gamma-1}{\gamma}} \right]}$$

where $\dot{m}_p$ is the mass-flow rate measured in the flow transfer assemblies and $p_{t,j}$ is the average jet stagnation pressure for both nozzles. The average jet total (stagnation) pressure $p_{t,j}$ is determined by numerically averaging the total number of individual measurements made.

APPENDIX B

LONGITUDINAL AERODYNAMIC CHARACTERISTICS

The resulting force and moment coefficients measured by both force balances from this investigation are tabulated in this appendix, and table III serves as an index to these tables. Plotted coefficients are presented for selected configurations.

These longitudinal aerodynamic characteristics are referred to the stability axis. For some configurations, fouling between the main and thrust-balance model components invalidated measurements made by the thrust balance. Hence, only main balance data are presented. The correlation of the computer symbols appearing in the tabulated printout with the mathematical symbols defined in "Symbols" is as follows:

Computer symbol	Mathematical symbol
C(D-F)	$C_{(D-F)}$
C(DN-F)	$C_{(D_n-F)}$
CDAERO	$C_{D,a}$
CL	C_L
CLAERO	$C_{L,a}$
CLN	$C_{L,n}$
CM	C_m
CMAERO	$C_{m,a}$
MACH	M
NPR	NPR
VEER	δ_v, deg
ALPHA	α, deg

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TABLE I.- INDEX TO SUMMARY DATA FIGURES

Figure	Parameter	Nozzle	Power setting	SERN orientation	δ_v, deg
11	$C_{(D-F),0}$; NPR = 1.0	Variable	Variable	Variable	0
12	$C_{(D-F)}$; C_L = 0.40; NPR = 1.0	↓	↓	↓	0
13	$C_{(D-F),0}$				Variable
14	$C_{(D-F)}$; C_L = 0.40				↓
15	$\Delta C_{(D-F)}$; C_L = 0.40			Upright	0
16	$(C_{D,a})_0$ and $(L_a/D_a)_{max}$			Upright	Variable
17	$C_{D,a}$; $C_{L,a}$ = 0.40			Variable	↓
18	F_g/F_i and δ	SERN	Dry	Variable	
19	F_g/F_i and δ	SERN	A/B	--------	
20	F_g/F_i and δ	2-D C-D	A/B	Variable	↓
21	$\Delta F_g/F_i$ and δ	Variable	Variable		0
22	$C_{L,0}$; $(C_{L,n})_0$; $(C_{L,a})_0$	SERN			Variable
23	$\Delta C_{(D-F),0}$ and $\Delta(C_{D,a})_0$	↓			↓
24	$\Delta C_{(D-F)}$; C_L = 0.40				
25	$C_{(D-F)}$	Variable			
26	ΔC_L	SERN	↓	↓	↓

TABLE II.- INDEX TO BASIC DATA FIGURES

Figure	Sweep	Nozzle	Power setting	SERN orientation	M	δ_v, deg	NPR
Total aerodynamic characteristics; effect of wing sweep							
27	Variable	SERN	A/B	Upright	0.60	Variable	1.0
28	↓	↓	↓	↓	.60	↓	3.5
29					.90		1.0
30					.90		3.5
31					.90		5.0
32					1.20		1.0
33		↓			1.20		7.0
34		2-D C-D			.60		3.5
35		↓			.90		3.5
36	↓	↓	↓	↓	1.20	↓	7.0
Thrust-removed characteristics; effect of wing sweep							
37	Variable	SERN	A/B	Upright	0.60	Variable	1.0
38	↓	↓	↓	↓	.60	↓	3.5
39					.90		1.0
40					.90		3.5
41					.90		5.0
42		↓			1.20		1.0
43					1.20		7.0
44		2-D C-D			.60		3.5
45		↓			.90		3.5
46		↓			1.20	↓	7.0
47	↓	SERN	↓	↓	Variable	0	Variable

TABLE II.- Concluded

Figure	Sweep	Nozzle	Power setting	SERN orientation	M	δ_v, deg	NPR
Total aerodynamic characteristics; effect of SERN orientation							
48	Aft	SERN	A/B	Variable	0.60	Variable	1.0
49	↓	↓	↓	↓	.60	↓	3.5
50	↓	↓	↓	↓	.90	↓	1.0
51	↓	↓	↓	↓	.90	↓	3.5
52	↓	↓	↓	↓	.90	↓	5.0
53	↓	↓	↓	↓	1.20	↓	1.0
54	↓	↓	↓	↓	1.20	↓	7.0
55	↓	↓	Dry	↓	.60	↓	1.0
56	↓	↓	↓	↓	.60	↓	3.5
57	↓	↓	↓	↓	.90	↓	1.0
58	↓	↓	↓	↓	.90	↓	3.5
59	↓	↓	↓	↓	.90	↓	5.0
60	↓	↓	↓	↓	1.20	↓	1.0
61	↓	↓	↓	↓	1.20	↓	7.0
62	Forward	↓	↓	↓	.60	↓	1.0
63	↓	↓	↓	↓	.60	↓	3.5
64	↓	↓	↓	↓	.90	↓	1.0
65	↓	↓	↓	↓	.90	↓	3.5
Thrust-removed characteristics; effect of SERN orientation							
66	Forward	SERN	Dry	Variable	0.60	Variable	1.0
67	↓	↓	↓	↓	.60	↓	3.5
68	↓	↓	↓	↓	.90	↓	1.0
69	↓	↓	↓	↓	.90	↓	3.5
Total aerodynamic characteristics; effect of vectoring							
70	Aft	SERN	A/B	Upright	Variable	Variable	Variable
71	Aft	↓	↓	Inverted	↓	↓	↓
72	Forward	↓	↓	↓	↓	↓	↓
73	Aft	2-D C-D	↓	↓	0.60	↓	3.5
74	Forward	2-D C-D	↓	↓	.60	↓	3.5

TABLE III.- INDEX TO TABULATED DATA OF APPENDIX B

Table	Sweep	Nozzle	Power setting	SERN orientation	δ_v, deg
B1	Aft	SERN	Dry	Upright	Variable
B2	↓	↓	Dry	Inverted	↓
B3	↓	↓	A/B	Upright	↓
B4	↓	↓	↓	Inverted	↓
B5	↓	2-D C-D	↓	↓	0
B6	↓	↓	↓	↓	10
B7	↓	↓	↓	↓	20
B8	Forward	SERN	Dry	Upright	Variable
B9	↓	↓	Dry	Inverted	↓
B10	↓	↓	A/B	Upright	↓
B11	↓	↓	↓	Inverted	↓
B12	↓	2-D C-D	↓	↓	0
B13	↓	↓	↓	↓	10
B14	↓	↓	↓	↓	20

TABLE B1.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH UPRIGHT SERN, DRY POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.899	-.38	1.04	-1.97	-.0979	.0203	.0005	.0031	-.0984	.0173	.0194	.0194
.901	-.37	1.05	.01	-.0022	.0163	.0051	.0028	-.0073	.0135	.0002	.0026
.901	-.37	1.05	2.05	.0896	.0182	.0074	.0023	.0822	.0159	-.0167	-.0146
.900	-.37	1.06	4.08	.1840	.0260	.0081	.0025	.1759	.0235	-.0357	-.0330
.900	-.37	1.05	5.98	.2637	.0389	-.0008	.0040	.2645	.0349	-.0475	-.0490
.899	-.37	1.03	8.04	.3534	.0617	-.0015	.0058	.3550	.0559	-.0677	-.0688
.901	-.58	1.00	12.54	.5032	.1310	.0162	.0079	.4871	.1231	-.1051	-.0966
.899	-.32	2.01	-2.04	-.1220	-.0062	-.0130	-.0248	-.1090	.0186	.0315	.0231
.901	-.33	2.02	-.03	-.0272	-.0112	-.0116	-.0248	-.0156	.0136	.0128	.0061
.903	-.36	2.03	2.02	.0687	-.0104	-.0094	-.0246	.0780	.0142	-.0058	-.0108
.901	-.35	2.00	4.04	.1691	-.0026	-.0048	-.0237	.1739	.0211	-.0263	-.0291
.899	-.36	2.00	8.07	.3798	.0362	.0085	-.0240	.3714	.0602	-.0777	-.0726
.900	-.34	2.00	11.78	.5085	.0923	.0197	-.0244	.4888	.1168	-.1085	-.0959
.900	-.39	3.52	-1.97	-.1245	-.0435	-.0179	-.0632	-.1066	.0197	.0338	.0215
.898	-.38	3.51	-.03	-.0304	-.0489	-.0167	-.0630	-.0137	.0141	.0151	.0052
.901	-.37	3.52	2.05	.0698	-.0475	-.0153	-.0618	.0850	.0143	-.0046	-.0123
.900	-.38	3.52	4.02	.1703	-.0405	-.0113	-.0612	.1816	.0207	-.0247	-.0304
.898	-.37	3.50	8.08	.3845	-.0013	.0002	-.0607	.3843	.0594	-.0760	-.0740
.900	-.38	3.51	12.03	.5244	.0600	.0108	-.0605	.5136	.1205	-.1093	-.0989
.898	-.19	4.98	-2.05	-.1295	-.0818	-.0185	-.1013	-.1110	.0195	.0333	.0201
.900	-.19	5.00	-.05	-.0294	-.0871	-.0180	-.1007	-.0114	.0136	.0139	.0031
.899	-.17	5.01	2.02	.0733	-.0865	-.0176	-.0999	.0909	.0134	-.0055	-.0138
.902	-.19	5.02	4.07	.1799	-.0779	-.0132	-.0985	.1931	.0206	-.0271	-.0334
.900	-.35	5.02	8.01	.3939	-.0395	-.0036	-.0987	.3976	.0593	-.0780	-.0768
.901	-.39	5.02	12.01	.5394	.0230	.0034	-.0983	.5360	.1214	-.1113	-.1022
.900	.12	7.04	-.03	-.0241	-.1403	-.0168	-.1527	-.0073	.0124	.0117	.0001
.901	.11	7.04	4.08	.1929	-.1305	-.0156	-.1511	.2086	.0206	-.0281	-.0369
.896	.57	7.01	8.08	.4150	-.0913	-.0115	-.1524	.4265	.0612	-.0780	-.0806
.900	.39	7.04	12.07	.5658	-.0250	-.0044	-.1511	.5702	.1260	-.1140	-.1072
.603	.11	1.00	-2.03	-.1192	.0161	-.0109	.0020	-.1083	.0141	.0214	.0154
.604	.12	1.00	.01	-.0325	.0128	-.0097	.0025	-.0228	.0103	.0082	.0030
.604	.12	1.00	2.00	.0554	.0134	-.0078	.0030	.0632	.0104	-.0044	-.0089
.601	.13	1.00	4.04	.1492	.0182	-.0036	.0029	.1528	.0153	-.0189	-.0228
.601	.36	1.00	7.98	.3458	.0505	.0036	.0025	.3421	.0479	-.0553	-.0534
.601	.36	1.00	5.99	.2450	.0300	-.0009	.0029	.2459	.0271	-.0364	-.0376
.602	.37	1.00	11.99	.5050	.1104	.0132	.0029	.4919	.1075	-.0851	-.0764
.601	.61	.99	16.04	.6172	.1886	.0250	.0030	.5921	.1856	-.1130	-.0979
.601	.10	2.02	-2.03	-.1182	-.0462	-.0082	-.0590	-.1100	.0129	.0189	.0164
.592	.12	2.00	.02	-.0237	-.0509	-.0077	-.0601	-.0160	.0092	.0022	.0013
.602	.11	2.02	2.05	.0697	-.0483	-.0060	-.0590	.0756	.0108	-.0102	-.0098
.604	.11	2.02	4.02	.1667	-.0428	-.0027	-.0593	.1694	.0165	-.0250	-.0237
.597	.11	2.01	7.98	.3714	-.0094	.0022	-.0604	.3692	.0509	-.0610	-.0550
.602	.10	2.02	12.02	.5406	.0539	.0094	-.0604	.5312	.1144	-.0907	-.0785
.596	.10	2.01	16.09	.6604	.1341	.0171	-.0621	.6434	.1961	-.1213	-.1009
.602	.10	2.02	16.11	.6613	.1359	.0175	-.0613	.6437	.1971	-.1218	-.1011
.600	.10	3.51	-2.01	-.1148	-.1299	-.0058	-.1415	-.1090	.0116	.0164	.0131
.600	.10	3.52	.01	-.0171	-.1332	-.0074	-.1413	-.0097	.0081	.0015	-.0000
.601	.10	3.52	2.01	.0787	-.1312	-.0087	-.1405	.0873	.0093	-.0118	-.0120
.602	.11	3.52	4.04	.1795	-.1251	-.0079	-.1399	.1874	.0148	-.0271	-.0270
.600	.11	3.51	7.99	.3916	-.0904	-.0081	-.1406	.3997	.0502	-.0625	-.0583
.604	.10	3.52	12.02	.5676	-.0240	-.0071	-.1396	.5747	.1156	-.0924	-.0813
.599	.10	3.51	16.08	.6961	.0582	-.0045	-.1410	.7007	.1992	-.1235	-.1045
.599	.10	4.99	-.00	-.0262	-.2184	-.0175	-.2267	-.0087	.0083	.0073	-.0018
.599	.11	5.00	4.00	.1799	-.2119	-.0245	-.2261	.2044	.0142	-.0211	-.0278
.599	.10	5.00	8.01	.4023	-.1763	-.0295	-.2262	.4318	.0499	-.0562	-.0596
.602	.41	5.03	16.03	.7145	-.0265	-.0371	-.2209	.7516	.1944	-.1177	-.1082
.599	10.05	5.00	.03	.0993	-.2015	.0802	-.2088	.0190	.0072	-.0606	-.0020
.599	10.05	5.01	4.04	.3059	-.1859	.0744	-.2149	.2315	.0290	-.0935	-.0305
.599	10.04	5.00	8.05	.5272	-.1409	.0684	-.2209	.4588	.0800	-.1309	-.0631
.601	10.05	5.01	16.29	.8454	.0329	.0608	-.2308	.7847	.2637	-.1910	-.1099
.404	-.14	1.00	-2.00	-.1228	.0153	-.0136	.0018	-.1092	.0135	.0236	.0160
.401	-.14	1.00	.04	-.0354	.0126	-.0125	.0022	-.0229	.0104	.0102	.0033
.401	-.14	1.00	2.00	.0517	.0126	-.0106	.0026	.0622	.0101	-.0030	-.0091
.403	-.13	1.00	3.96	.1432	.0168	-.0064	.0026	.1496	.0142	-.0168	-.0225
.402	-.13	1.00	6.03	.2511	.0285	-.0014	.0022	.2524	.0263	-.0350	-.0395
.402	-.13	1.00	7.97	.3527	.0491	.0032	.0016	.3495	.0474	-.0521	-.0539
.401	-.13	1.00	12.01	.5265	.1105	.0120	.0016	.5144	.1089	-.0814	-.0768
.399	-.14	1.00	15.43	.6379	.1792	.0201	.0017	.6178	.1775	-.1057	-.0955
.401	.11	2.00	-2.01	-.1237	-.1208	-.0129	-.1332	-.1108	.0124	.0202	.0160

TABLE B1.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.401	.10	2.00	-.02	-.0282	-.1236	-.0150	-.1332	-.0133	.0096	.0050	.0024
.401	.10	2.00	2.05	.0734	-.1235	-.0162	-.1333	.0896	.0099	-.0102	-.0112
.401	.10	2.01	4.04	.1737	-.1187	-.0156	-.1341	.1893	.0154	-.0255	-.0257
.401	.10	2.00	8.02	.3964	-.0835	-.0132	-.1346	.4096	.0511	-.0607	-.0577
.400	.09	2.00	12.02	.5800	-.0184	-.0106	-.1336	.5905	.1152	-.0895	-.0808
.400	.09	2.01	15.60	.7101	.0593	-.0057	-.1331	.7158	.1925	-.1144	-.0995
.402	.10	3.52	-1.98	-.1146	-.3050	-.0062	-.3154	-.1084	.0104	.0172	.0120
.399	.10	3.51	-.05	-.0178	-.3114	-.0141	-.3191	-.0038	.0077	.0036	-.0007
.401	.10	3.52	2.01	.0903	-.3085	-.0208	-.3169	.1111	.0084	-.0116	-.0141
.401	.10	3.51	4.05	.2038	-.3014	-.0277	-.3154	.2315	.0140	-.0276	-.0291
.400	.10	3.51	8.03	.4405	-.2645	-.0367	-.3155	.4772	.0510	-.0619	-.0616
.400	.09	3.51	12.00	.6311	-.1966	-.0467	-.3128	.6777	.1162	-.0889	-.0835
.403	.10	3.51	15.57	.7708	-.1128	-.0533	-.3071	.8241	.1943	-.1154	-.1028
.404	-.39	5.02	-.04	-.0805	-.4993	-.0721	-.5092	-.0084	.0099	.0415	-.0047
.399	-.38	5.01	4.00	.1479	-.5064	-.1021	-.5133	.2500	.0069	.0113	-.0326
.399	-.38	5.01	8.04	.4048	-.4721	-.1274	-.5078	.5322	.0357	-.0242	-.0646
.400	-.40	5.00	15.41	.7688	-.3239	-.1631	-.4888	.9319	.1649	-.0772	-.1085
.900	9.79	1.04	-1.99	-.0822	.0202	.0103	.0051	-.0925	.0150	.0125	.0185
.900	9.79	1.04	-.01	.0059	.0164	.0108	.0038	-.0048	.0127	-.0026	.0030
.897	9.76	1.05	2.02	.0975	.0181	.0112	.0028	.0864	.0153	-.0185	-.0140
.896	9.77	1.05	4.10	.1963	.0268	.0138	.0027	.1824	.0241	-.0391	-.0331
.899	9.74	1.05	6.03	.2946	.0423	.0190	.0024	.2757	.0398	-.0626	-.0539
.898	9.76	1.05	8.07	.3998	.0665	.0261	.0012	.3737	.0652	-.0875	-.0774
.900	9.46	1.05	11.59	.4963	.1168	.0243	.0038	.4721	.1130	-.1060	-.0925
.898	10.01	3.52	-2.02	-.0833	-.0431	.0174	-.0571	-.1007	.0139	.0081	.0189
.899	9.97	3.52	.00	.0149	-.0460	.0191	-.0581	-.0042	.0120	-.0101	.0023
.900	10.01	3.53	2.03	.1123	-.0436	.0226	-.0591	.0898	.0155	-.0295	-.0155
.899	10.00	3.52	4.02	.2159	-.0348	.0262	-.0602	.1897	.0254	-.0524	-.0351
.902	9.98	3.53	8.05	.4378	.0081	.0390	-.0633	.3988	.0715	-.1098	-.0833
.900	9.98	3.52	9.99	.5087	.0363	.0405	-.0648	.4682	.1011	-.1220	-.0931
.902	10.00	5.02	-2.01	-.0623	-.0779	.0393	-.0893	-.1016	.0114	-.0089	.0166
.901	9.99	5.02	-.03	.0336	-.0804	.0415	-.0916	-.0079	.0112	-.0266	.0002
.901	10.01	5.02	2.00	.1378	-.0767	.0436	-.0932	.0942	.0165	-.0474	-.0186
.903	10.22	5.03	4.01	.2447	-.0663	.0470	-.0949	.1977	.0286	-.0714	-.0393
.898	10.15	5.03	8.02	.4684	-.0241	.0542	-.1009	.4142	.0768	-.1233	-.0843
.900	10.04	5.05	8.90	.5033	-.0105	.0559	-.1016	.4475	.0911	-.1313	-.0909
.900	-5.36	1.02	-2.04	-.1102	.0210	-.0074	.0022	-.1029	.0188	.0272	.0212
.899	-5.32	1.04	-.02	-.0175	.0159	-.0044	.0018	-.0132	.0142	.0084	.0046
.900	-5.30	1.04	2.02	.0677	.0173	-.0073	.0027	.0750	.0147	-.0050	-.0110
.901	-5.46	1.04	4.04	.1609	.0246	-.0069	.0040	.1679	.0206	-.0230	-.0290
.900	-5.49	1.03	5.99	.2523	.0380	-.0090	.0059	.2613	.0321	-.0405	-.0473
.901	-5.49	1.02	8.04	.3428	.0605	-.0069	.0077	.3497	.0528	-.0627	-.0675
.899	-5.61	.95	13.93	.5220	.1509	.0094	.0121	.5127	.1388	-.1021	-.0986
.902	-4.78	3.50	-2.04	-.1412	-.0423	-.0282	-.0619	-.1130	.0196	.0433	.0244
.900	-4.77	3.48	-.01	-.0408	-.0477	-.0264	-.0609	-.0143	.0132	.0229	.0065
.900	-4.76	3.51	2.00	.0572	-.0482	-.0252	-.0605	.0824	.0123	.0032	-.0109
.901	-4.75	3.51	4.04	.1611	-.0409	-.0207	-.0595	.1819	.0186	-.0179	-.0299
.899	-4.75	3.51	8.03	.3677	-.0039	-.0115	-.0587	.3792	.0549	-.0680	-.0722
.899	-4.78	3.51	12.66	.5319	.0681	.0030	-.0579	.5289	.1260	-.1062	-.1007
.601	-4.55	1.00	-2.02	-.1301	.0171	-.0165	.0038	-.1136	.0133	.0274	.0157
.602	-4.52	1.00	-.02	-.0412	.0136	-.0153	.0042	-.0259	.0094	.0137	.0030
.603	-4.53	1.00	2.00	.0448	.0135	-.0137	.0046	.0585	.0088	.0008	-.0088
.599	-4.53	.99	4.02	.1364	.0180	-.0097	.0047	.1461	.0133	-.0129	-.0225
.602	-4.52	.99	6.03	.2338	.0296	-.0072	.0048	.2409	.0249	-.0300	-.0378
.602	-4.54	.99	8.04	.3344	.0501	-.0032	.0047	.3377	.0454	-.0484	-.0531
.601	-4.54	.99	12.00	.4896	.1080	.0048	.0051	.4848	.1029	-.0773	-.0759
.600	-4.76	.98	15.96	.5964	.1822	.0137	.0065	.5827	.1756	-.1039	-.0969
.601	-4.77	3.51	-2.03	-.1448	-.1281	-.0276	-.1424	-.1172	.0143	.0324	.0141
.600	-4.76	3.52	.00	-.0470	-.1334	-.0294	-.1431	-.0176	.0097	.0169	.0004
.602	-4.76	3.54	2.02	.0491	-.1335	-.0306	-.1426	.0797	.0091	.0022	-.0121
.599	-4.76	3.51	4.00	.1485	-.1283	-.0321	-.1419	.1806	.0136	-.0121	-.0258
.599	-4.77	3.50	8.04	.3635	-.0942	-.0315	-.1408	.3949	.0466	-.0476	-.0582
.598	-4.77	3.49	12.01	.5367	-.0325	-.0298	-.1386	.5666	.1060	-.0766	-.0815
.598	-4.77	3.49	15.93	.6618	.0458	-.0257	-.1363	.6875	.1821	-.1057	-.1036
.601	10.31	1.01	-2.02	-.1021	.0152	-.0013	.0026	-.1008	.0126	.0134	.0149
.601	10.31	1.01	-.03	-.0168	.0127	-.0004	.0027	-.0165	.0100	.0007	.0028
.601	10.30	1.01	2.02	.0726	.0138	.0031	.0028	.0694	.0110	-.0117	-.0097
.602	10.31	1.02	3.99	.1645	.0189	.0068	.0024	.1577	.0165	-.0268	-.0234
.602	10.31	1.02	3.99	.1637	.0192	.0067	.0025	.1570	.0166	-.0266	-.0232
.601	10.31	1.02	6.04	.2665	.0323	.0107	.0024	.2558	.0299	-.0451	-.0390

TABLE B1.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.602	10.30	1.02	8.00	.3642	.0527	.0152	.0020	.3490	.0507	-.0641	-.0547
.598	10.30	1.02	12.02	.5283	.1155	.0268	.0014	.5014	.1141	-.0949	-.0782
.599	10.76	1.01	16.02	.6404	.1948	.0390	.0004	.6014	.1944	-.1242	-.0990
.598	10.04	3.48	-2.02	-.0636	-.1262	.0330	-.1321	-.0965	.0059	-.0133	.0115
.603	10.02	3.51	.03	.0372	-.1263	.0332	-.1330	.0040	.0068	-.0265	-.0007
.598	10.02	3.52	2.03	.1340	-.1249	.0340	-.1369	.1000	.0119	-.0396	-.0128
.601	10.02	3.52	4.01	.2354	-.1163	.0337	-.1370	.2017	.0207	-.0569	-.0280
.602	10.01	3.52	8.05	.4503	-.0763	.0325	-.1403	.4177	.0639	-.0939	-.0599
.601	10.01	3.52	12.06	.6232	-.0085	.0330	-.1440	.5903	.1355	-.1245	-.0835
.599	9.07	3.51	16.11	.7490	.0785	.0364	-.1468	.7126	.2253	-.1552	-.1058
.899	20.03	1.04	-2.04	-.0965	.0204	.0048	.0042	-.1013	.0162	.0166	.0199
.899	20.05	1.04	-.02	-.0011	.0166	.0075	.0036	-.0085	.0130	-.0016	.0029
.903	20.04	1.05	2.01	.0944	.0191	.0127	.0035	.0818	.0156	-.0203	-.0147
.903	20.27	1.06	4.02	.1934	.0279	.0174	.0036	.1760	.0242	-.0424	-.0341
.900	20.77	1.06	6.02	.2979	.0437	.0234	.0027	.2745	.0409	-.0677	-.0555
.902	20.04	1.07	8.02	.4010	.0674	.0298	.0017	.3712	.0658	-.0966	-.0805
.897	20.25	1.07	10.85	.4958	.1086	.0343	.0011	.4616	.1075	-.1137	-.0938
.900	20.00	3.52	-2.00	-.0534	-.0371	.0474	-.0473	-.1007	.0102	-.0178	.0151
.900	19.99	3.54	.03	.0459	-.0397	.0509	-.0506	-.0049	.0109	-.0364	-.0026
.901	19.99	3.52	2.06	.1479	-.0350	.0541	-.0523	.0939	.0174	-.0575	-.0214
.899	19.99	3.51	3.99	.2492	-.0246	.0581	-.0545	.1911	.0299	-.0798	-.0404
.898	19.99	3.51	8.39	.4897	.0252	.0716	-.0610	.4181	.0862	-.1369	-.0902
.899	19.98	5.03	-2.01	-.0291	-.0696	.0756	-.0762	-.1048	.0066	-.0375	.0125
.902	19.99	5.01	.03	.0746	-.0693	.0766	-.0788	-.0020	.0095	-.0566	-.0059
.901	19.99	4.99	1.98	.1742	-.0639	.0778	-.0818	.0964	.0179	-.0757	-.0231
.901	19.99	4.99	4.04	.2834	-.0520	.0790	-.0845	.2043	.0324	-.0989	-.0444
.902	19.99	5.01	7.44	.4752	-.0139	.0913	-.0907	.3839	.0768	-.1405	-.0845
.597	20.05	1.02	-2.00	-.0959	.0155	.0045	.0045	-.1004	.0110	.0058	.0117
.599	20.04	1.02	-.03	-.0095	.0131	.0061	.0043	-.0155	.0088	-.0069	-.0002
.602	20.05	1.03	1.98	.0783	.0142	.0103	.0038	.0679	.0104	-.0190	-.0124
.600	20.04	1.03	4.01	.1727	.0202	.0141	.0036	.1586	.0166	-.0354	-.0262
.600	20.04	1.03	5.99	.2730	.0331	.0179	.0030	.2551	.0301	-.0533	-.0416
.599	20.04	1.04	8.00	.3734	.0552	.0234	.0024	.3500	.0528	-.0713	-.0568
.602	20.04	1.04	12.02	.5321	.1169	.0329	.0009	.4992	.1160	-.1016	-.0801
.600	19.57	1.02	16.11	.6493	.2000	.0461	-.0003	.6032	.2003	-.1344	-.1035
.600	20.01	3.51	-2.00	.0052	-.1138	.0840	-.1161	-.0788	.0023	-.0518	.0080
.602	20.00	3.53	.02	.1017	-.1122	.0843	-.1194	.0174	.0072	-.0655	-.0042
.600	20.00	3.53	4.11	.3068	-.0965	.0842	-.1269	.2226	.0304	-.0991	-.0331
.602	19.99	3.53	8.04	.5136	-.0530	.0831	-.1333	.4305	.0803	-.1352	-.0646
.599	19.99	3.51	16.33	.8192	.1171	.0881	-.1473	.7311	.2644	-.1979	-.1126
.603	20.00	5.01	-1.99	.0601	-.1824	.1299	-.1804	-.0698	-.0020	-.0816	.0073
.601	20.00	5.02	-.01	.1636	-.1806	.1286	-.1870	.0349	.0064	-.0978	-.0062
.602	20.00	5.01	2.01	.2614	-.1719	.1256	-.1906	.1358	.0187	-.1124	-.0193
.602	20.00	5.01	4.01	.3654	-.1595	.1232	-.1956	.2422	.0361	-.1292	-.0340
.599	20.00	5.01	7.96	.5856	-.1132	.1170	-.2061	.4685	.0929	-.1677	-.0678
.598	19.99	5.00	12.05	.7665	-.0340	.1085	-.2127	.6580	.1787	-.1985	-.0948
.599	20.00	5.01	15.39	.8869	.0471	.1073	-.2179	.7797	.2650	-.2210	-.1164
1.202	10.45	.79	-2.04	-.0828	.0431	-.0077	.0229	-.0751	.0202	.0283	.0246
1.201	10.38	.80	-.01	-.0092	.0393	-.0031	.0232	-.0061	.0161	.0049	.0036
1.201	10.43	.80	2.00	.0619	.0406	.0021	.0230	.0598	.0176	-.0171	-.0172
1.202	10.46	.80	3.99	.1346	.0464	.0065	.0227	.1280	.0237	-.0413	-.0389
1.201	10.39	.81	6.01	.2094	.0571	.0120	.0221	.1973	.0350	-.0670	-.0616
1.201	10.44	.80	8.00	.2828	.0733	.0185	.0211	.2642	.0522	-.0921	-.0834
1.199	10.30	.80	9.61	.3407	.0898	.0240	.0194	.3168	.0704	-.1123	-.1005
1.200	10.30	5.02	-2.00	-.0713	-.0143	.0100	-.0322	-.0813	.0179	.0160	.0264
1.200	10.25	5.02	-.01	.0090	-.0169	.0187	-.0325	-.0097	.0155	-.0102	.0058
1.201	10.26	4.99	2.00	.0844	-.0148	.0252	-.0333	.0591	.0185	-.0335	-.0142
1.201	10.26	5.01	4.03	.1649	-.0080	.0321	-.0351	.1328	.0271	-.0600	-.0357
1.200	10.27	5.02	8.00	.3222	.0217	.0454	-.0404	.2768	.0621	-.1126	-.0785
1.200	10.28	5.00	8.80	.3535	.0304	.0478	-.0416	.3057	.0720	-.1230	-.0874
1.201	9.74	7.03	-2.02	-.0727	-.0456	.0099	-.0641	-.0826	.0184	.0179	.0254
1.201	9.75	7.02	.03	.0088	-.0487	.0143	-.0644	-.0055	.0157	-.0071	.0035
1.202	9.74	7.05	2.01	.0848	-.0474	.0200	-.0659	.0648	.0185	-.0297	-.0164
1.202	10.63	7.04	4.05	.1706	-.0383	.0305	-.0658	.1401	.0275	-.0594	-.0376
1.200	9.85	7.04	8.06	.3285	-.0089	.0386	-.0712	.2899	.0623	-.1105	-.0811
1.200	9.75	7.03	8.93	.3632	.0006	.0412	-.0726	.3220	.0732	-.1219	-.0904
1.198	-.21	.76	-2.06	-.0870	.0439	-.0102	.0229	-.0768	.0210	.0303	.0244
1.200	-.20	.77	.01	-.0117	.0399	-.0051	.0233	-.0066	.0166	.0063	.0030
1.202	-.45	.77	2.00	.0597	.0408	-.0003	.0232	.0600	.0177	-.0154	-.0178
1.202	-.68	.78	4.01	.1322	.0464	.0034	.0231	.1288	.0233	-.0392	-.0400
1.201	-.89	.76	6.00	.2051	.0570	.0080	.0226	.1971	.0343	-.0642	-.0625

TABLE B1.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
1.202	-.13	.78	8.00	.2792	.0728	.0142	.0218	.2650	.0510	-.0903	-.0850
1.201	.09	.78	9.96	.3498	.0935	.0200	.0205	.3297	.0730	-.1141	-.1059
1.198	.13	5.00	-2.03	-.0906	-.0178	-.0148	-.0381	-.0759	.0204	.0322	.0219
1.201	.26	5.00	-.02	-.0149	-.0217	-.0119	-.0377	-.0030	.0160	.0090	.0006
1.200	.11	5.00	1.99	.0616	-.0203	-.0063	-.0375	.0679	.0172	-.0141	-.0202
1.200	.10	5.00	4.01	.1416	-.0145	-.0007	-.0377	.1423	.0232	-.0397	-.0421
1.201	-.28	5.01	8.02	.2986	.0139	.0108	-.0395	.2878	.0534	-.0919	-.0861
1.200	-.20	5.01	9.80	.3673	.0332	.0172	-.0417	.3501	.0749	-.1159	-.1046
1.201	.26	7.04	-2.02	-.0833	-.0483	-.0046	-.0681	-.0787	.0198	.0262	.0232
1.201	.24	7.04	-.01	-.0038	-.0519	-.0013	-.0676	-.0025	.0157	.0025	.0016
1.202	.26	7.04	1.99	.0726	-.0504	.0035	-.0675	.0691	.0171	-.0194	-.0189
1.202	.29	7.00	4.01	.1533	-.0436	.0074	-.0676	.1458	.0240	-.0444	-.0410
1.200	.11	6.99	8.04	.3112	-.0146	.0147	-.0707	.2965	.0561	-.0961	-.0855
1.199	.18	7.01	9.96	.3865	.0064	.0188	-.0734	.3678	.0798	-.1208	-.1064
1.200	.05	9.01	.03	.0058	-.0815	.0098	-.0970	-.0040	.0155	-.0048	.0025
1.199	.05	9.00	4.03	.1675	-.0731	.0173	-.0992	.1502	.0261	-.0525	-.0406
1.200	-.12	9.01	8.06	.3287	-.0429	.0224	-.1027	.3063	.0598	-.1034	-.0852
1.199	-.06	9.05	9.46	.3856	-.0281	.0247	-.1054	.3608	.0773	-.1214	-.1007
1.198	-5.36	.76	-2.00	-.0860	.0433	-.0135	.0226	-.0726	.0207	.0319	.0229
1.199	-5.08	.78	-.00	-.0134	.0396	-.0074	.0232	-.0060	.0164	.0078	.0026
1.200	-5.14	.78	1.96	.0570	.0405	-.0021	.0232	.0591	.0173	-.0136	-.0176
1.200	-5.04	.78	4.00	.1311	.0461	.0015	.0234	.1296	.0228	-.0379	-.0402
1.202	-5.13	.78	6.00	.2044	.0568	.0060	.0230	.1984	.0338	-.0631	-.0630
1.201	-5.02	.77	8.03	.2780	.0729	.0112	.0223	.2668	.0506	-.0888	-.0856
1.201	-4.93	.77	9.88	.3442	.0923	.0161	.0212	.3281	.0711	-.1111	-.1053
1.199	-5.03	7.02	-2.00	-.0886	-.0484	-.0135	-.0685	-.0750	.0201	.0309	.0208
1.201	-5.06	7.04	.03	-.0080	-.0521	-.0098	-.0680	.0018	.0158	.0066	-.0006
1.202	-5.07	7.04	2.02	.0686	-.0508	-.0051	-.0680	.0737	.0172	-.0158	-.0210
1.201	-5.08	7.01	4.03	.1484	-.0443	-.0008	-.0676	.1492	.0233	-.0400	-.0428
1.201	-5.15	7.02	8.05	.3071	-.0157	.0067	-.0697	.3004	.0540	-.0916	-.0876
1.201	-5.24	7.01	10.09	.3848	.0069	.0103	-.0715	.3745	.0784	-.1170	-.1095
.398	20.06	1.01	-2.02	-.0916	.0148	.0067	.0066	-.0984	.0082	.0024	.0104
.399	20.05	1.01	-.01	-.0047	.0129	.0086	.0061	-.0133	.0068	-.0100	-.0010
.401	20.04	1.01	2.01	.0838	.0139	.0125	.0054	.0712	.0085	-.0234	-.0141
.400	20.04	1.01	3.98	.1802	.0195	.0179	.0045	.1623	.0150	-.0385	-.0278
.400	20.04	1.01	6.00	.2852	.0326	.0223	.0034	.2630	.0292	-.0571	-.0443
.401	20.04	1.02	7.99	.3894	.0548	.0272	.0027	.3622	.0521	-.0764	-.0601
.400	20.04	1.02	12.01	.5604	.1199	.0368	.0017	.5236	.1182	-.1058	-.0828
.401	20.04	1.01	15.58	.6749	.1963	.0505	.0004	.6243	.1959	-.1303	-.1005
.402	20.04	3.51	-2.04	.0974	-.2764	.1498	-.2709	-.0524	-.0055	-.0991	.0065
.401	20.07	3.51	.02	.2038	-.2712	.1451	-.2766	.0586	.0054	-.1145	-.0072
.405	20.08	3.53	2.01	.3093	-.2599	.1391	-.2786	.1703	.0187	-.1300	-.0214
.400	20.04	3.51	3.99	.4174	-.2518	.1343	-.2890	.2830	.0372	-.1485	-.0370
.398	20.04	3.50	8.00	.6572	-.1995	.1236	-.3008	.5335	.1013	-.1869	-.0699
.400	20.05	3.50	12.04	.8410	-.1130	.1116	-.3068	.7294	.1938	-.2152	-.0929
.400	20.07	3.50	15.72	.9816	-.0160	.1033	-.3139	.8782	.2979	-.2431	-.1130

TABLE B2.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH INVERTED SERN, DRY POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
1.202	-4.89	.78	-1.98	-.0652	.0395	.0204
1.201	-4.89	.78	.05	.0102	.0376	-.0018
1.202	-4.89	.77	2.09	.0858	.0411	-.0247
1.202	-4.89	.76	4.09	.1676	.0498	-.0505
1.200	-4.89	.76	6.05	.2419	.0633	-.0754
1.199	-4.89	.78	8.05	.3157	.0818	-.1002
1.199	-4.87	.79	8.77	.3406	.0893	-.1090
1.199	-4.86	7.01	-1.93	-.0767	-.0517	.0235
1.201	-4.86	7.01	.08	.0024	-.0538	.0011
1.200	-4.87	7.01	2.08	.0820	-.0506	-.0218
1.201	-4.90	7.00	4.07	.1662	-.0421	-.0465
1.199	-4.95	7.01	8.07	.3257	-.0097	-.0971
1.200	-4.94	7.00	9.25	.3700	.0040	-.1116
1.200	-.05	.77	-1.95	-.0635	.0401	.0171
1.201	-.11	.76	.04	.0093	.0382	-.0047
1.201	-.11	.75	2.06	.0842	.0415	-.0279
1.201	-.13	.75	4.07	.1632	.0498	-.0534
1.200	-.13	.76	6.06	.2395	.0632	-.0790
1.199	-.13	.76	8.07	.3143	.0812	-.1053
1.200	-.12	.76	8.44	.3289	.0852	-.1106
1.200	-.10	5.01	-1.95	-.0642	-.0217	.0149
1.200	-.08	4.98	.06	.0147	-.0231	-.0078
1.201	-.11	5.00	2.05	.0900	-.0201	-.0306
1.203	-.07	5.01	4.08	.1746	-.0115	-.0564
1.200	-.08	5.00	8.07	.3291	.0208	-.1067
1.200	-.07	5.01	8.75	.3551	.0282	-.1154
1.202	-.10	7.01	-1.94	-.0691	-.0521	.0178
1.200	.04	6.98	.05	.0090	-.0538	-.0040
1.202	.06	7.01	2.09	.0892	-.0504	-.0273
1.199	.05	6.99	4.07	.1713	-.0421	-.0522
1.198	.03	6.98	8.08	.3309	-.0094	-.1032
1.203	.03	7.00	9.10	.3693	.0022	-.1160
1.201	-.00	9.00	-1.97	-.0806	-.0824	.0235
1.201	.07	9.01	.06	.0010	-.0846	.0011
1.201	.13	9.02	2.06	.0808	-.0817	-.0215
1.199	.22	9.00	4.07	.1662	-.0733	-.0465
1.199	.19	8.98	8.10	.3321	-.0398	-.0988
1.200	.22	8.99	9.27	.3779	-.0266	-.1134
1.199	10.03	.75	-1.95	-.0590	.0402	.0132
1.200	9.99	.75	.07	.0155	.0386	-.0094
1.201	9.98	.74	2.06	.0919	.0420	-.0337
1.201	9.99	.73	4.05	.1713	.0506	-.0606
1.199	9.74	.72	6.08	.2483	.0647	-.0876
1.200	9.75	.70	8.09	.3250	.0837	-.1150

TABLE B2.- Continued

MACH	VFER	NPR	ALPHA	CL	C(D-F)	CM
.600	10.02	.98	-1.97	-.0367	.0162	-.0081
.601	10.01	.98	.05	.0507	.0165	-.0216
.601	10.00	.98	2.06	.1390	.0203	-.0355
.604	10.00	.98	4.05	.2387	.0299	-.0531
.601	10.02	.98	6.06	.3409	.0470	-.0722
.601	10.02	.98	8.07	.4397	.0722	-.0899
.601	10.01	.98	12.06	.5817	.1382	-.1169
.598	9.10	.97	15.42	.6679	.2071	-.1414
.601	10.03	3.51	-1.93	-.0089	-.1308	-.0267
.603	10.04	3.51	.08	.0876	-.1280	-.0419
.601	10.04	3.51	2.07	.1840	-.1229	-.0574
.601	10.03	3.50	4.08	.2864	-.1120	-.0740
.601	10.02	3.50	8.11	.5063	-.0655	-.1110
.601	9.78	3.50	12.07	.6659	.0073	-.1404
.600	9.78	3.49	15.53	.7709	.0849	-.1675
.601	10.26	5.01	.09	.1098	-.2117	-.0588
.601	9.78	5.00	4.09	.3157	-.1927	-.0900
.600	9.81	5.00	8.07	.5391	-.1456	-.1264
.600	9.86	5.01	12.09	.7091	-.0706	-.1545
.603	9.94	5.00	15.58	.8171	.0120	-.1790
1.202	10.31	5.00	-1.94	-.0521	-.0213	.0091
1.202	10.28	5.00	.04	.0255	-.0221	-.0137
1.199	9.94	4.99	2.13	.1075	-.0179	-.0385
1.201	9.86	5.00	2.08	.1055	-.0180	-.0379
1.200	9.74	5.00	4.10	.1898	-.0087	-.0643
1.199	9.57	4.99	8.09	.3482	.0252	-.1164
1.200	10.11	6.99	-1.97	-.0576	-.0514	.0116
1.199	9.96	6.98	.06	.0249	-.0526	-.0123
1.201	9.54	6.99	2.11	.1057	-.0484	-.0369
1.201	10.06	7.01	2.09	.1051	-.0486	-.0369
1.200	9.87	6.99	4.08	.1893	-.0391	-.0632
1.199	9.72	7.00	8.12	.3534	-.0048	-.1164
.902	-4.86	1.05	-2.01	-.0970	.0171	.0213
.899	-4.87	1.03	-.01	-.0077	.0157	.0068
.901	-4.86	1.01	2.01	.0803	.0195	-.0077
.898	-4.87	.98	4.02	.1758	.0294	-.0244
.902	-4.87	.96	5.98	.2707	.0461	-.0449
.900	-4.87	.95	8.02	.3632	.0706	-.0680
.900	-5.00	.93	11.92	.4981	.1328	-.1026
.901	-4.99	3.50	-2.01	-.0963	-.0463	.0187
.900	-4.98	3.50	-.03	.0006	-.0482	.0011
.901	-4.97	3.50	2.00	.0984	-.0442	-.0172
.901	-4.95	3.51	4.00	.2063	-.0334	-.0388
.901	-4.94	3.51	8.02	.4087	.0109	-.0852
.899	-4.88	3.50	11.14	.5235	.0610	-.1112
.900	-.09	1.05	-2.04	-.0919	.0167	.0176

TABLE B2.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.898	-.10	1.04	-.02	-.0005	.0151	.0019
.899	-.08	1.02	2.00	.0902	.0191	-.0144
.899	.39	.99	3.98	.1877	.0291	-.0333
.899	-.08	.97	6.00	.2863	.0461	-.0539
.899	.03	.96	8.00	.3768	.0709	-.0768
.903	-.09	.93	11.26	.4893	.1223	-.1050
.903	-.08	1.99	-2.03	-.0770	-.0102	.0074
.901	.15	2.00	-.03	.0185	-.0115	-.0100
.901	.16	2.00	2.00	.1165	-.0067	-.0291
.901	.15	2.00	3.99	.2211	.0043	-.0508
.899	-.01	1.99	8.02	.4212	.0490	-.0986
.899	-.01	1.99	9.92	.4913	.0782	-.1140
.904	-.11	3.52	-2.02	-.0743	-.0480	.0046
.901	-.09	3.51	.01	.0247	-.0488	-.0136
.901	-.08	3.50	2.02	.1235	-.0438	-.0325
.902	-.07	3.50	3.99	.2289	-.0324	-.0550
.903	.31	3.51	8.01	.4342	.0138	-.1045
.901	.18	3.50	9.69	.4995	.0393	-.1165
.899	-.13	5.00	-2.00	-.0728	-.0881	.0026
.902	-.14	5.02	.00	.0265	-.0884	-.0157
.899	-.27	4.99	1.99	.1276	-.0836	-.0348
.901	.08	5.00	4.00	.2416	-.0710	-.0607
.901	.05	4.99	8.03	.4590	-.0232	-.1128
.898	.06	5.00	9.53	.5195	-.0006	-.1244
.901	12.22	1.02	-2.02	-.0636	.0173	.0007
.900	10.04	1.03	-2.01	-.0727	.0166	.0064
.899	10.03	1.03	.02	.0211	.0158	-.0108
.900	10.02	1.01	2.00	.1135	.0206	-.0280
.901	10.01	1.00	3.98	.2143	.0319	-.0501
.899	9.51	.99	6.00	.3209	.0503	-.0756
.899	9.04	.96	8.01	.4173	.0767	-.1012
.898	9.10	.95	9.72	.4803	.1028	-.1148
.900	9.27	3.51	-2.00	-.0475	-.0485	-.0120
.903	10.01	3.52	-2.01	-.0452	-.0474	-.0138
.900	10.25	3.50	-.00	.0548	-.0474	-.0337
.900	10.00	3.51	2.00	.1546	-.0412	-.0528
.901	9.99	3.52	4.00	.2622	-.0285	-.0765
.900	10.03	3.51	7.87	.4744	.0184	-.1293
.902	10.09	3.51	7.87	.4733	.0187	-.1295
.900	9.93	5.02	-2.02	-.0431	-.0863	-.0177
.903	9.88	5.00	.01	.0568	-.0847	-.0365
.903	9.91	5.01	2.00	.1595	-.0785	-.0563
.900	9.88	5.00	4.03	.2697	-.0665	-.0787
.898	9.98	4.99	8.00	.4873	-.0179	-.1306
.901	19.94	.96	-2.01	-.0329	.0206	-.0182
.900	19.94	.97	.01	.0618	.0209	-.0365

TABLE B2.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.901	19.95	.97	1.98	.1569	.0272	-.0554
.900	19.94	.97	4.01	.2586	.0399	-.0777
.901	19.94	.96	6.00	.3597	.0592	-.1013
.899	19.95	.95	7.85	.4518	.0831	-.1249
.900	20.17	3.52	-2.02	-.0210	-.0435	-.0308
.901	20.17	3.50	.01	.0791	-.0419	-.0499
.900	20.18	3.50	2.00	.1832	-.0346	-.0706
.900	20.17	3.50	4.00	.2893	-.0206	-.0940
.898	20.18	3.50	7.14	.4592	.0155	-.1339
.901	20.18	5.03	-1.98	-.0346	-.0836	-.0219
.901	20.17	5.00	-.01	.0631	-.0823	-.0407
.902	20.17	5.01	2.03	.1712	-.0751	-.0622
.902	20.17	5.01	4.02	.2823	-.0612	-.0863
.900	20.17	5.01	7.61	.4831	-.0180	-.1333
.601	20.20	.94	-2.00	.0038	.0206	-.0223
.599	20.19	.95	-.03	.0891	.0224	-.0362
.603	20.19	.94	1.98	.1782	.0277	-.0507
.602	20.19	.94	4.01	.2780	.0387	-.0692
.600	20.19	.94	6.01	.3809	.0573	-.0888
.600	20.19	.94	8.02	.4836	.0843	-.1074
.603	20.19	.95	12.01	.6224	.1522	-.1339
.597	20.20	.95	15.54	.7094	.2257	-.1589
.602	20.20	3.50	-2.02	.0374	-.1200	-.0534
.600	20.20	3.49	-.01	.1335	-.1168	-.0686
.601	20.20	3.50	1.99	.2297	-.1093	-.0837
.601	20.20	3.51	4.02	.3336	-.0974	-.1008
.599	20.20	3.50	8.02	.5470	-.0492	-.1376
.601	20.20	3.50	12.02	.7077	.0259	-.1640
.599	20.20	3.50	15.64	.8150	.1082	-.1912
.602	-.11	1.00	-2.00	-.0512	.0134	.0058
.603	-.12	1.00	-.02	.0354	.0135	-.0074
.602	-.12	1.00	2.01	.1201	.0165	-.0207
.599	-.12	1.00	3.98	.2169	.0251	-.0381
.599	-.11	1.00	6.00	.3239	.0416	-.0578
.600	-.11	1.00	7.99	.4233	.0662	-.0750
.601	-.09	1.00	11.99	.5716	.1323	-.1027
.599	.36	.99	15.40	.6593	.2014	-.1276
.601	-.12	2.00	-.01	.0326	-.0477	-.0071
.602	.14	2.00	4.00	.2315	-.0351	-.0411
.600	-.06	2.00	7.98	.4307	.0042	-.0727
.601	.15	2.00	12.02	.5885	.0722	-.1009
.602	.15	2.00	15.42	.6821	.1429	-.1263
.602	-.13	3.50	-1.99	-.0610	-.1317	.0072
.599	-.11	3.51	-.00	.0328	-.1331	-.0069
.600	-.10	3.50	1.98	.1278	-.1288	-.0215
.601	-.10	3.51	3.99	.2310	-.1198	-.0380

TABLE B2.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.600	-.10	3.50	8.03	.4472	-.0778	-.0736
.601	-.09	3.50	12.03	.6083	-.0090	-.1015
.599	-.10	3.49	15.43	.7090	.0624	-.1265
.602	-.03	5.00	.01	.0491	-.2181	-.0176
.602	-.06	5.01	3.99	.2500	-.2055	-.0487
.601	-.06	5.01	8.03	.4769	-.1628	-.0862
.599	-.02	5.00	12.02	.6493	-.0922	-.1147
.598	.18	4.99	15.45	.7579	-.0172	-.1408
.599	-5.00	1.01	-2.00	-.0594	.0136	.0110
.599	-4.99	1.01	-.01	.0285	.0134	-.0020
.601	-5.00	1.01	1.98	.1127	.0161	-.0153
.600	-4.99	1.00	3.97	.2074	.0242	-.0311
.599	-4.99	1.00	6.01	.3141	.0402	-.0512
.602	-4.99	1.00	8.01	.4140	.0645	-.0695
.602	-4.99	1.00	12.02	.5639	.1306	-.0969
.600	-4.98	.99	15.40	.6502	.1989	-.1214
.601	-4.82	3.50	-2.03	-.0924	-.1298	.0216
.601	-4.82	3.51	-.03	.0035	-.1315	.0071
.602	-4.82	3.51	2.01	.1019	-.1284	-.0082
.602	-4.82	3.51	4.01	.2023	-.1214	-.0238
.600	-4.82	3.50	8.01	.4168	-.0816	-.0587
.601	-4.82	3.50	12.03	.5776	-.0144	-.0855
.599	-4.82	3.49	15.34	.6746	.0528	-.1087

TABLE B3.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH UPRIGHT SERN, A/B POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.901	19.96	1.02	-1.96	-.0943	.0183	.0060	.0030	-.1003	.0153	.0109	.0153
.902	19.98	1.02	.03	-.0025	.0152	.0061	.0028	-.0086	.0124	-.0049	-.0006
.902	19.98	1.01	2.06	.0918	.0178	.0059	.0033	.0859	.0145	-.0222	-.0183
.902	19.98	1.01	4.04	.1968	.0272	.0100	.0048	.1868	.0225	-.0451	-.0388
.902	19.99	1.01	6.05	.3059	.0445	.0166	.0069	.2893	.0376	-.0715	-.0617
.899	19.98	1.00	8.06	.4012	.0689	.0205	.0091	.3807	.0598	-.0953	-.0832
.902	19.98	.98	10.61	.4884	.1077	.0250	.0138	.4634	.0939	-.1140	-.0988
.898	20.02	3.49	-1.94	-.0402	-.0801	.0587	-.0927	-.0989	.0126	-.0271	.0161
.900	20.08	3.51	.06	.0593	-.0803	.0658	-.0914	-.0065	.0111	-.0451	.0006
.900	20.04	3.50	2.05	.1660	-.0749	.0747	-.0890	.0913	.0142	-.0658	-.0168
.900	20.02	3.51	4.06	.2808	-.0624	.0867	-.0856	.1941	.0232	-.0902	-.0373
.902	19.95	3.51	8.08	.5121	-.0125	.1152	-.0746	.3969	.0621	-.1427	-.0856
.899	19.93	4.99	-1.96	-.0137	-.1360	.0886	-.1473	-.1023	.0113	-.0441	.0176
.900	19.91	5.00	.07	.0941	-.1347	.0988	-.1443	-.0047	.0096	-.0629	.0010
.899	19.92	4.99	2.07	.2032	-.1276	.1092	-.1408	.0940	.0132	-.0825	-.0164
.898	19.92	4.99	4.08	.3168	-.1142	.1219	-.1365	.1949	.0223	-.1051	-.0358
.901	19.91	5.00	6.90	.4920	-.0789	.1541	-.1259	.3379	.0470	-.1359	-.0698
.599	19.98	1.00	-1.97	-.0841	.0159	.0041	.0054	-.0882	.0105	.0055	.0094
.601	19.99	1.00	.03	.0019	.0142	.0040	.0054	-.0022	.0088	-.0058	-.0018
.602	19.99	1.00	2.03	.0842	.0156	.0035	.0053	.0807	.0103	-.0173	-.0134
.602	19.98	1.00	4.04	.1812	.0222	.0066	.0058	.1746	.0164	-.0352	-.0285
.601	19.98	1.00	6.03	.2796	.0358	.0086	.0064	.2710	.0294	-.0522	-.0441
.601	19.97	1.00	8.04	.3769	.0579	.0112	.0075	.3657	.0504	-.0693	-.0596
.601	19.98	1.00	12.06	.5329	.1215	.0200	.0131	.5129	.1084	-.0983	-.0827
.600	19.98	.99	15.32	.6239	.1854	.0281	.0204	.5954	.1691	-.1224	-.1007
.599	20.02	3.50	-1.93	.0386	-.2049	.0931	-.2155	-.0546	.0106	-.0588	.0140
.600	19.95	3.51	.04	.1337	-.2013	.1038	-.2120	.0298	.0107	-.0730	.0018
.600	19.99	3.51	2.07	.2366	-.1941	.1154	-.2080	.1212	.0139	-.0884	-.0119
.601	19.98	3.49	4.08	.3417	-.1801	.1262	-.2017	.2155	.0217	-.1051	-.0264
.599	19.94	3.50	8.08	.5665	-.1327	.1512	-.1924	.4153	.0597	-.1429	-.0593
.598	19.95	3.49	12.08	.7409	-.0560	.1754	-.1776	.5655	.1217	-.1724	-.0834
.600	19.99	3.50	15.63	.8604	.0288	.1990	-.1602	.6614	.1890	-.1997	-.1043
.600	20.00	5.01	-1.95	.0958	-.3318	.1466	-.3408	-.0508	.0090	-.0872	.0185
.600	20.02	4.99	.07	.2035	-.3241	.1636	-.3335	.0399	.0094	-.1030	.0053
.600	19.94	4.99	2.06	.3103	-.3137	.1800	-.3270	.1303	.0133	-.1184	-.0079
.601	19.94	5.01	4.06	.4210	-.2992	.1970	-.3207	.2240	.0215	-.1355	-.0227
.600	20.01	5.00	8.11	.6615	-.2427	.2316	-.3035	.4299	.0608	-.1741	-.0569
.600	20.05	5.01	12.11	.8511	-.1590	.2668	-.2835	.5844	.1245	-.2032	-.0816
.599	20.05	5.00	14.43	.9484	-.0983	.2955	-.2672	.6529	.1689	-.2146	-.0965
.898	1.11	1.03	-2.02	-.0947	.0186	.0031	.0026	-.0978	.0160	.0171	.0189
.901	1.32	1.03	-.04	-.0033	.0155	.0043	.0024	-.0076	.0131	.0007	.0026
.899	-.43	1.03	2.02	.0911	.0177	.0050	.0025	.0861	.0152	-.0162	-.0163
.899	-.01	1.03	4.04	.1961	.0270	.0105	.0030	.1856	.0240	-.0399	-.0370
.903	-.08	1.03	6.01	.2992	.0435	.0170	.0031	.2823	.0404	-.0647	-.0584
.899	-.16	1.03	8.02	.4060	.0675	.0220	.0026	.3840	.0650	-.0915	-.0825
.900	.39	1.02	10.52	.4922	.1051	.0286	.0028	.4637	.1023	-.1105	-.0977
.899	.34	2.02	-.01	-.0170	-.0309	-.0092	-.0427	-.0077	.0118	.0080	.0020
.899	-.20	2.01	4.02	.1857	-.0206	-.0031	-.0412	.1888	.0206	-.0306	-.0342
.902	-.21	2.03	8.00	.3985	.0202	.0106	-.0414	.3880	.0616	-.0838	-.0794
.899	-.23	2.02	11.26	.5194	.0703	.0175	-.0415	.5019	.1118	-.1098	-.0999
.898	.01	3.51	-2.00	-.1116	-.0853	-.0054	-.1014	-.1062	.0162	.0251	.0177
.899	.02	3.51	.01	-.0104	-.0888	-.0057	-.1004	-.0047	.0116	.0063	.0002
.898	.03	3.51	2.04	.0938	-.0872	-.0050	-.1001	.0988	.0129	-.0128	-.0179
.901	.02	3.51	4.02	.2005	-.0777	-.0002	-.0992	.2007	.0214	-.0349	-.0378
.902	-.20	3.51	8.06	.4207	-.0348	.0079	-.0992	.4127	.0644	-.0879	-.0831
.899	-.46	3.50	11.38	.5453	.0169	.0120	-.0996	.5333	.1166	-.1146	-.1042
.899	.03	4.99	-2.02	-.1197	-.1461	-.0160	-.1630	-.1037	.0169	.0323	.0140
.899	.02	5.00	.01	-.0160	-.1511	-.0193	-.1625	.0033	.0114	.0137	-.0038
.900	-.04	5.02	2.04	.0881	-.1496	-.0209	-.1616	.1090	.0120	-.0047	-.0210
.899	-.17	5.00	4.02	.1971	-.1411	-.0197	-.1602	.2169	.0191	-.0254	-.0405
.902	-.21	5.03	8.03	.4223	-.0992	-.0127	-.1590	.4350	.0609	-.0783	-.0864
.898	-.23	5.01	11.92	.5759	-.0348	-.0092	-.1585	.5851	.1237	-.1105	-.1114
.902	-.21	6.99	.03	.0067	-.2318	-.0001	-.2419	.0068	.0101	.0031	-.0055
.900	-.22	7.01	4.05	.2334	-.2208	-.0051	-.2431	.2385	.0223	-.0383	-.0447
.900	-.22	7.01	8.07	.4667	-.1759	-.0063	-.2437	.4730	.0678	-.0902	-.0910
.900	-.27	7.04	11.35	.6031	-.1212	-.0075	-.2442	.6106	.1230	-.1184	-.1131

TABLE B3.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.599	.23	1.00	-1.99	-.0951	.0162	-.0048	.0037	-.0904	.0125	.0158	.0117
.601	.26	1.00	-.00	-.0087	.0139	-.0039	.0039	-.0048	.0100	.0027	-.0009
.602	.27	1.00	2.00	.0747	.0152	-.0022	.0041	.0769	.0112	-.0084	-.0124
.598	.28	1.00	4.02	.1669	.0209	-.0001	.0040	.1671	.0168	-.0219	-.0263
.597	.28	.99	6.02	.2641	.0336	.0019	.0042	.2621	.0294	-.0392	-.0421
.600	.27	.99	8.04	.3636	.0551	.0051	.0043	.3585	.0507	-.0569	-.0573
.598	.46	.99	12.05	.5176	.1151	.0137	.0047	.5039	.1103	-.0854	-.0798
.601	.69	.98	16.02	.6254	.1928	.0255	.0052	.5999	.1875	-.1132	-.1013
.600	.05	2.01	-1.99	-.1099	-.0848	-.0107	-.0959	-.0992	.0111	.0186	.0103
.601	.04	2.01	-.04	-.0188	-.0862	-.0114	-.0954	-.0074	.0092	.0061	-.0010
.600	.03	2.01	2.02	.0783	-.0860	-.0112	-.0954	.0895	.0094	-.0087	-.0142
.600	.03	2.01	4.00	.1762	-.0803	-.0090	-.0954	.1852	.0151	-.0239	-.0286
.598	.02	2.00	8.03	.3885	-.0440	-.0058	-.0954	.3942	.0514	-.0594	-.0598
.599	.02	2.01	12.02	.5569	.0188	-.0003	-.0950	.5573	.1138	-.0891	-.0836
.599	.06	2.00	16.02	.6816	.1017	.0063	-.0949	.6753	.1967	-.1207	-.1069
.601	.16	3.50	-2.03	-.1012	-.2157	.0028	-.2246	-.1040	.0090	.0156	.0091
.607	.24	3.52	-.00	.0007	-.2150	-.0015	-.2219	.0022	.0068	.0009	-.0040
.598	.02	3.50	-.01	.0001	-.2194	-.0026	-.2261	.0027	.0067	.0016	-.0041
.600	.02	3.50	2.03	.1006	-.2162	-.0070	-.2245	.1076	.0083	-.0124	-.0164
.601	.01	3.50	4.02	.2068	-.2096	-.0095	-.2249	.2163	.0153	-.0277	-.0311
.598	.01	3.50	8.03	.4283	-.1720	-.0155	-.2257	.4439	.0536	-.0641	-.0637
.598	.02	3.50	12.04	.6107	-.1046	-.0188	-.2255	.6296	.1209	-.0949	-.0869
.605	.03	3.51	16.00	.7365	-.0172	-.0201	-.2212	.7565	.2040	-.1253	-.1094
.599	.04	3.50	16.01	.7420	-.0181	-.0205	-.2237	.7625	.2055	-.1259	-.1101
.599	.02	5.00	.01	-.0283	-.3570	-.0349	-.3645	.0066	.0075	.0225	-.0074
.601	.02	5.01	4.02	.1909	-.3483	-.0516	-.3595	.2425	.0112	-.0067	-.0344
.599	.01	5.00	8.03	.4271	-.3114	-.0646	-.3577	.4916	.0463	-.0407	-.0667
.600	.22	5.01	15.85	.7548	-.1598	-.0861	-.3480	.8409	.1881	-.0999	-.1139
.599	10.01	1.00	-1.98	-.0861	.0153	.0013	.0042	-.0874	.0111	.0100	.0112
.599	10.02	1.00	-.02	-.0025	.0135	.0018	.0039	-.0043	.0096	-.0020	-.0010
.599	10.02	1.00	2.00	.0837	.0147	.0035	.0035	.0803	.0112	-.0132	-.0132
.600	10.02	1.00	4.00	.1753	.0207	.0056	.0034	.1698	.0172	-.0275	-.0274
.600	10.02	1.00	6.02	.2757	.0340	.0077	.0033	.2680	.0307	-.0448	-.0432
.599	10.02	1.00	7.99	.3725	.0551	.0102	.0032	.3624	.0519	-.0618	-.0585
.598	10.04	1.00	12.01	.5252	.1160	.0182	.0034	.5070	.1126	-.0885	-.0797
.604	10.04	.99	16.04	.6382	.1967	.0322	.0036	.6059	.1931	-.1181	-.1014
.600	10.03	3.53	-2.02	-.0351	-.2117	.0507	-.2158	-.0858	.0041	-.0190	.0088
.602	10.01	3.53	.00	.0668	-.2100	.0474	-.2165	.0194	.0064	-.0330	-.0046
.600	10.00	3.53	2.01	.1677	-.2076	.0449	-.2202	.1229	.0125	-.0472	-.0178
.602	10.00	3.53	4.04	.2740	-.1970	.0415	-.2210	.2326	.0240	-.0639	-.0328
.598	10.00	3.53	8.03	.4994	-.1564	.0347	-.2273	.4647	.0709	-.1017	-.0657
.607	9.99	3.55	12.03	.6706	-.0806	.0295	-.2249	.6411	.1443	-.1296	-.0878
.600	9.98	3.53	12.03	.6738	-.0839	.0292	-.2286	.6446	.1447	-.1302	-.0883
.599	9.92	3.52	16.18	.8117	.0101	.0272	-.2320	.7845	.2421	-.1623	-.1123
.604	10.00	5.01	.02	.0738	-.3412	.0503	-.3475	.0234	.0064	-.0328	-.0057
.600	10.00	4.98	4.03	.2960	-.3284	.0373	-.3531	.2587	.0247	-.0646	-.0347
.601	9.99	5.00	8.05	.5290	-.2838	.0217	-.3568	.5073	.0730	-.1013	-.0675
.601	9.95	5.01	16.06	.8634	-.1132	-.0019	-.3591	.8653	.2459	-.1610	-.1145
.900	10.25	1.04	-2.00	-.0783	.0189	.0165	.0049	-.0947	.0140	.0059	.0157
.897	10.27	1.04	-.02	.0008	.0155	.0088	.0032	-.0080	.0123	-.0040	.0008
.900	10.03	1.04	2.03	.0979	.0181	.0116	.0028	.0863	.0153	-.0225	-.0184
.900	10.03	1.04	4.05	.1995	.0268	.0156	.0028	.1839	.0240	-.0446	-.0389
.900	10.07	1.03	6.04	.3016	.0427	.0191	.0027	.2825	.0400	-.0675	-.0599
.898	10.03	1.03	8.02	.4025	.0668	.0232	.0025	.3793	.0643	-.0925	-.0829
.896	10.01	1.02	10.54	.4894	.1039	.0269	.0028	.4625	.1011	-.1091	-.0972
.899	10.14	3.52	-2.02	-.0757	-.0835	.0291	-.0954	-.1047	.0119	.0006	.0154
.898	9.87	3.52	.05	.0267	-.0865	.0279	-.0972	-.0012	.0106	-.0169	-.0019
.902	9.93	3.48	2.01	.1767	-.0807	.0303	-.0961	.0964	.0154	-.0367	-.0202
.902	10.01	3.52	4.04	.2380	-.0709	.0353	-.0983	.2027	.0274	-.0619	-.0410
.898	9.89	3.50	8.04	.4609	-.0276	.0422	-.1021	.4187	.0745	-.1142	-.0867
.901	9.87	3.51	9.38	.5155	-.0065	.0443	-.1028	.4712	.0963	-.1265	-.0966
.901	9.91	5.00	-2.00	-.0684	-.1428	.0368	-.1539	-.1052	.0117	-.0022	.0140
.902	9.98	5.01	.01	.0381	-.1441	.0402	-.1547	-.0020	.0106	-.0229	-.0026
.903	9.97	5.00	2.04	.1473	-.1392	.0422	-.1556	.1051	.0164	-.0454	-.0224
.901	9.97	5.02	4.08	.2605	-.1293	.0430	-.1585	.2175	.0292	-.0687	-.0429
.900	9.93	5.01	8.07	.4895	-.0831	.0482	-.1624	.4413	.0793	-.1225	-.0894
.898	9.93	4.99	9.18	.5364	-.0656	.0476	-.1632	.4888	.0976	-.1307	-.0965
1.201	-4.83	.82	-2.02	-.0778	.0394	-.0043	.0193	-.0735	.0201	.0286	.0248
1.203	-4.99	.82	.02	-.0007	.0364	.0030	.0198	-.0037	.0166	.0035	.0044
1.201	-5.04	.83	2.02	.0737	.0381	.0110	.0197	.0626	.0184	-.0201	-.0158

TABLE B3.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
1.201	-5.04	.83	4.02	.1487	.0447	.0178	.0193	.1310	.0253	-.0448	-.0369
1.201	-4.78	.83	6.03	.2235	.0563	.0238	.0181	.1997	.0382	-.0703	-.0591
1.200	-4.83	.83	8.01	.2961	.0731	.0295	.0166	.2666	.0565	-.0959	-.0812
1.201	-4.80	.82	9.34	.3437	.0870	.0332	.0152	.3105	.0717	-.1122	-.0955
1.202	-5.17	7.01	-2.02	-.0772	-.1046	.0005	-.1237	-.0777	.0191	.0294	.0218
1.203	-5.18	7.01	.00	.0067	-.1075	.0039	-.1231	.0028	.0155	.0055	.0008
1.202	-5.16	7.00	2.01	.0871	-.1056	.0070	-.1236	.0801	.0180	-.0177	-.0200
1.202	-5.22	6.97	4.01	.1686	-.0984	.0099	-.1240	.1587	.0256	-.0424	-.0421
1.199	-5.29	7.01	6.03	.3341	-.0688	.0144	-.1283	.3197	.0596	-.0942	-.0869
1.198	-5.03	7.00	9.76	.4036	-.0485	.0176	-.1303	.3860	.0817	-.1166	-.1051
1.202	-.16	.80	-2.02	-.0751	.0410	-.0014	.0200	-.0737	.0209	.0259	.0252
1.203	-.17	.81	-.03	-.0011	.0379	.0058	.0205	-.0069	.0174	.0018	.0053
1.202	-.37	.82	2.01	.0729	.0399	.0136	.0206	.0593	.0193	-.0212	-.0148
1.202	.08	.83	4.00	.1492	.0463	.0206	.0201	.1286	.0262	-.0470	-.0366
1.199	.25	.83	6.00	.2229	.0578	.0265	.0188	.1965	.0390	-.0724	-.0588
1.199	.19	.82	8.04	.2981	.0746	.0321	.0170	.2660	.0577	-.0986	-.0820
1.199	.15	.82	9.18	.3396	.0865	.0350	.0159	.3046	.0707	-.1127	-.0946
1.202	.13	5.01	-2.00	-.0776	-.0560	-.0012	-.0760	-.0764	.0200	.0287	.0234
1.200	.12	5.02	-.02	.0023	-.0597	.0028	-.0760	-.0005	.0163	.0053	.0022
1.201	.10	5.01	2.01	.0799	-.0576	.0069	-.0760	.0730	.0184	-.0171	-.0187
1.200	.05	5.00	4.03	.1623	-.0507	.0108	-.0767	.1516	.0260	-.0426	-.0413
1.198	.05	4.98	8.03	.3211	-.0204	.0182	-.0794	.3029	.0590	-.0944	-.0858
1.196	.04	5.02	9.66	.3840	-.0034	.0213	-.0823	.3627	.0789	-.1151	-.1034
1.201	.11	7.00	-2.00	-.0678	-.1037	.0126	-.1225	-.0804	.0187	.0224	.0242
1.200	.18	7.00	-.02	.0135	-.1065	.0150	-.1227	-.0015	.0162	-.0012	.0033
1.201	.10	7.00	2.01	.0947	-.1042	.0181	-.1234	.0766	.0192	-.0245	-.0182
1.201	.09	7.00	4.04	.1778	-.0968	.0209	-.1247	.1569	.0278	-.0496	-.0402
1.198	.11	6.97	8.05	.3425	-.0652	.0256	-.1283	.3170	.0631	-.1012	-.0852
1.199	.08	7.04	9.61	.4052	-.0484	.0276	-.1317	.3776	.0833	-.1209	-.1021
1.202	.14	9.01	.00	.0230	-.1540	.0260	-.1700	-.0030	.0161	-.0078	.0039
1.202	.13	8.99	4.02	.1925	-.1428	.0301	-.1725	.1624	.0297	-.0553	-.0389
1.199	.11	9.01	8.05	.3645	-.1109	.0332	-.1784	.3313	.0675	-.1069	-.0843
1.197	.10	9.01	9.23	.4133	-.0975	.0340	-.1804	.3793	.0829	-.1218	-.0972
1.201	10.04	.80	-2.02	-.0754	.0425	.0002	.0218	-.0756	.0206	.0249	.0260
1.202	10.05	.81	.00	.0002	.0392	.0075	.0221	-.0074	.0170	.0003	.0054
1.203	10.07	.81	2.03	.0739	.0403	.0140	.0215	.0599	.0189	-.0219	-.0154
1.202	10.18	.81	3.98	.1454	.0464	.0191	.0209	.1263	.0255	-.0456	-.0366
1.201	10.09	.80	6.02	.2210	.0579	.0241	.0198	.1968	.0381	-.0715	-.0601
1.199	10.07	.78	8.01	.2941	.0745	.0287	.0185	.2655	.0560	-.0966	-.0832
1.198	10.21	.77	9.34	.3422	.0885	.0317	.0175	.3105	.0710	-.1126	-.0979
1.200	10.06	5.02	-2.00	-.0660	-.0547	.0146	-.0726	-.0806	.0179	.0189	.0259
1.199	9.97	5.02	.02	.0150	-.0576	.0189	-.0733	-.0039	.0157	-.0056	.0044
1.202	9.96	5.02	2.03	.0934	-.0550	.0240	-.0740	.0694	.0190	-.0289	-.0165
1.201	9.89	5.03	4.04	.1738	-.0478	.0285	-.0756	.1453	.0279	-.0543	-.0380
1.199	9.93	5.01	8.02	.3343	-.0165	.0381	-.0798	.2962	.0633	-.1070	-.0823
1.198	9.88	5.00	8.95	.3714	-.0059	.0405	-.0809	.3309	.0751	-.1191	-.0924
1.201	9.99	7.04	-2.02	-.0542	-.1013	.0319	-.1181	-.0861	.0168	.0099	.0273
1.199	10.00	7.00	.02	.0280	-.1031	.0348	-.1189	-.0068	.0158	-.0142	.0055
1.201	10.00	7.04	2.04	.1091	-.1006	.0385	-.1208	.0706	.0202	-.0374	-.0153
1.201	9.98	7.04	4.03	.1910	-.0924	.0414	-.1226	.1496	.0302	-.0617	-.0363
1.199	9.99	7.04	8.04	.3579	-.0606	.0465	-.1287	.3114	.0681	-.1131	-.0817
1.198	9.96	7.01	8.72	.3855	-.0527	.0474	-.1296	.3380	.0769	-.1217	-.0895
.902	9.86	1.03	-2.03	-.0759	.0210	.0194	.0062	-.0953	.0148	.0049	.0155
.904	10.05	1.04	-.02	.0018	.0179	.0120	.0039	-.0103	.0140	-.0046	.0012
.901	10.05	1.04	2.03	.0980	.0199	.0123	.0032	.0856	.0166	-.0220	-.0180
.903	10.03	1.03	4.01	.1959	.0284	.0162	.0035	.1796	.0249	-.0443	-.0387
.902	9.98	1.03	6.01	.2967	.0438	.0197	.0033	.2771	.0405	-.0674	-.0601
.900	9.99	1.02	8.01	.3949	.0678	.0233	.0031	.3716	.0647	-.0912	-.0822
.899	9.79	1.00	11.77	.5228	.1263	.0317	.0041	.4911	.1222	-.1181	-.1044
.902	10.04	3.53	-2.03	-.0793	-.0798	.0257	-.0940	-.1050	.0142	.0050	.0167
.901	10.03	3.52	.03	.0230	-.0826	.0272	-.0953	-.0042	.0128	-.0144	-.0006
.895	10.02	3.50	2.01	.1254	-.0807	.0286	-.0973	.0968	.0166	-.0334	-.0187
.902	10.01	3.53	2.02	.1263	-.0798	.0301	-.0968	.0962	.0171	-.0346	-.0193
.902	10.01	3.54	4.03	.2352	-.0698	.0332	-.0982	.2020	.0284	-.0585	-.0400
.900	10.00	3.52	8.05	.4542	-.0259	.0404	-.1011	.4138	.0752	-.1112	-.0857
.900	9.69	3.52	9.62	.5191	-.0019	.0415	-.1023	.4776	.1005	-.1239	-.0963
.902	9.99	4.99	-2.01	-.0698	-.1391	.0353	-.1522	-.1051	.0131	.0006	.0154
.897	9.95	4.99	-.00	.0339	-.1429	.0363	-.1550	-.0024	.0121	-.0192	-.0016
.901	9.98	5.00	2.02	.1433	-.1379	.0372	-.1556	.1061	.0177	-.0399	-.0207
.899	9.95	5.00	4.04	.2556	-.1274	.0387	-.1574	.2170	.0300	-.0633	-.0410
.896	9.27	4.99	8.06	.4819	-.0826	.0418	-.1617	.4401	.0791	-.1155	-.0869

TABLE B3.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.901	10.34	5.01	9.48	.5454	-.0576	.0470	-.1617	.4984	.1041	-.1314	-.0983
.603	10.04	1.00	-2.03	-.0849	.0185	.0030	.0050	-.0879	.0134	.0108	.0126
.601	10.27	1.00	-.01	-.0002	.0167	.0034	.0048	-.0036	.0119	-.0012	.0005
.602	10.05	1.00	2.01	.0845	.0179	.0051	.0043	.0795	.0137	-.0120	-.0115
.601	10.37	1.00	4.01	.1753	.0238	.0071	.0041	.1682	.0197	-.0265	-.0254
.604	10.30	1.00	5.99	.2716	.0365	.0086	.0039	.2630	.0326	-.0433	-.0411
.600	10.30	1.00	8.01	.3717	.0586	.0113	.0038	.3605	.0547	-.0609	-.0570
.600	10.30	1.00	12.00	.5227	.1186	.0195	.0040	.5032	.1146	-.0876	-.0782
.601	10.53	.99	16.06	.6328	.1984	.0333	.0037	.5996	.1947	-.1165	-.0998
.601	9.97	3.51	-1.98	-.0277	-.2040	.0545	-.2118	-.0822	.0078	-.0187	.0106
.602	10.00	3.50	.02	.0724	-.2023	.0513	-.2126	.0211	.0103	-.0319	-.0022
.600	9.98	3.51	2.00	.1711	-.1994	.0491	-.2162	.1219	.0168	-.0460	-.0154
.600	9.98	3.50	4.04	.2781	-.1893	.0456	-.2174	.2326	.0281	-.0629	-.0305
.599	9.95	3.49	8.00	.4867	-.1500	.0305	-.2220	.4563	.0719	-.0938	-.0626
.599	9.99	3.50	12.03	.6742	-.0749	.0357	-.2249	.6384	.1499	-.1304	-.0859
.601	10.03	3.50	16.20	.8146	.0219	.0354	-.2271	.7792	.2490	-.1639	-.1108
.600	9.97	5.00	-2.03	-.0204	-.3381	.0659	-.3455	-.0863	.0074	-.0197	.0099
.599	10.16	5.00	-.01	.0835	-.3376	.0580	-.3481	.0255	.0106	-.0337	-.0031
.604	10.16	5.03	2.00	.1904	-.3305	.0508	-.3475	.1396	.0170	-.0473	-.0163
.601	10.17	5.01	4.05	.3020	-.3219	.0439	-.3514	.2581	.0295	-.0647	-.0319
.597	10.24	4.99	8.01	.5358	-.2798	.0292	-.3584	.5066	.0786	-.1023	-.0648
.600	10.20	5.00	12.06	.7211	-.2027	.0152	-.3578	.7059	.1551	-.1303	-.0876
.600	10.13	5.02	16.15	.8723	-.1049	.0049	-.3605	.8673	.2556	-.1630	-.1133
.902	-4.88	1.02	-2.01	-.1041	.0215	-.0051	.0024	-.0990	.0191	.0255	.0207
.902	-4.86	1.03	-.01	-.0105	.0176	-.0022	.0027	-.0083	.0149	.0069	.0038
.900	-4.63	1.03	1.99	.0862	.0197	.0027	.0031	.0835	.0166	-.0131	-.0149
.895	-4.85	1.03	3.99	.1854	.0271	.0039	.0036	.1816	.0235	-.0327	-.0340
.900	-4.84	1.03	6.00	.2924	.0437	.0119	.0039	.2805	.0399	-.0603	-.0574
.907	-4.62	1.03	8.00	.3974	.0695	.0212	.0038	.3762	.0656	-.0912	-.0832
.898	-5.32	1.01	11.06	.4984	.1137	.0240	.0047	.4743	.1090	-.1080	-.0987
.900	-5.20	3.50	-2.03	-.1351	-.0808	-.0269	-.1014	-.1082	.0206	.0435	.0217
.900	-5.10	3.50	.01	-.0314	-.0856	-.0265	-.1001	-.0050	.0145	.0227	.0027
.900	-5.22	3.51	2.00	.0699	-.0848	-.0263	-.0992	.0962	.0144	.0035	-.0146
.902	-5.12	3.51	4.02	.1766	-.0765	-.0230	-.0977	.1997	.0212	-.0181	-.0344
.898	-5.19	3.49	8.01	.3892	-.0372	-.0169	-.0960	.4061	.0588	-.0675	-.0775
.900	-5.06	3.52	12.47	.5575	.0347	-.0035	-.0951	.5611	.1299	-.1074	-.1078
.601	-5.10	.99	-2.02	-.1094	.0203	-.0129	.0040	-.0964	.0164	.0254	.0147
.604	-5.10	.99	-.02	-.0235	.0175	-.0111	.0046	-.0124	.0129	.0118	.0024
.601	-5.32	.99	1.99	.0636	.0183	-.0093	.0050	.0729	.0133	-.0008	-.0097
.602	-5.10	.99	4.00	.1566	.0235	-.0051	.0051	.1618	.0183	-.0152	-.0236
.598	-4.91	.99	8.00	.2571	.0360	-.0026	.0055	.2597	.0305	-.0327	-.0394
.602	-5.10	.98	8.02	.3480	.0571	-.0031	.0071	.3511	.0500	-.0469	-.0541
.601	-4.91	.98	12.00	.5055	.1162	.0071	.0068	.4984	.1095	-.0766	-.0763
.601	-5.13	.97	15.85	.6070	.1898	.0152	.0089	.5919	.1809	-.1019	-.0970
.602	-5.07	3.51	-2.01	-.1402	-.2108	-.0310	-.2286	-.1092	.0178	.0400	.0120
.602	-5.07	3.52	-.02	-.0396	-.2153	-.0356	-.2286	-.0040	.0132	.0254	-.0010
.601	-5.09	3.51	2.01	.0628	-.2153	-.0397	-.2278	.1025	.0124	.0107	-.0138
.601	-5.09	3.51	4.01	.1686	-.2103	-.0429	-.2267	.2114	.0164	-.0056	-.0279
.601	-5.10	3.51	8.03	.3920	-.1733	-.0470	-.2229	.4390	.0496	-.0408	-.0605
.601	-5.10	3.51	12.02	.5681	-.1118	-.0502	-.2192	.6183	.1074	-.0711	-.0851
.601	-5.23	3.51	15.76	.6947	-.0345	-.0512	-.2156	.7459	.1811	-.0999	-.1080

TABLE B4.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH INVERTED SERN, A/B POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.222	-.40	1.00	.15	.0537	.0215	.0069
.401	-.33	1.00	.18	.0307	.0167	.0002
.600	-.37	1.00	.19	.0196	.0156	.0001
.699	-.62	1.00	.18	.0156	.0153	.0004
.799	-.64	1.00	.18	.0112	.0153	.0021
.898	-.64	1.02	.18	.0061	.0157	.0033
.953	-.64	.97	.06	-.0284	.0294	.0210
1.002	-.72	.92	.14	-.0082	.0396	.0062
1.204	-4.90	.80	-1.90	-.0730	.0396	.0253
1.202	-4.90	.79	.07	.0001	.0368	.0026
1.202	-4.90	.78	2.10	.0778	.0401	-.0217
1.201	-4.89	.77	4.11	.1594	.0487	-.0486
1.199	-4.87	.75	6.11	.2367	.0620	-.0749
1.199	-4.84	.74	8.13	.3137	.0805	-.1012
1.200	-4.82	.74	8.83	.3398	.0880	-.1105
1.202	-4.88	7.01	-1.94	-.0949	-.1075	.0287
1.201	-4.87	6.99	.07	-.0135	-.1110	.0062
1.200	-4.86	6.98	2.09	.0696	-.1086	-.0176
1.201	-4.86	7.00	4.11	.1577	-.1010	-.0436
1.200	-4.86	6.98	8.12	.3281	-.0679	-.0960
1.198	-4.86	7.00	9.80	.3956	-.0488	-.1173
1.199	-10.24	.78	-1.92	-.0714	.0397	.0225
1.200	-10.24	.78	.08	.0018	.0371	-.0000
1.200	-10.49	.77	2.08	.0770	.0403	-.0238
1.201	-10.50	.76	4.08	.1573	.0488	-.0501
1.203	-10.49	.74	6.10	.2346	.0622	-.0763
1.203	-9.95	.74	8.11	.3095	.0805	-.1018
1.199	-10.98	.74	8.82	.3357	.0886	-.1107
1.200	-10.00	5.00	-1.94	-.0883	-.0583	.0272
1.201	-9.99	5.00	.08	-.0059	-.0615	.0032
1.203	-9.98	5.01	2.08	.0744	-.0590	-.0206
1.203	-9.98	5.01	4.11	.1600	-.0509	-.0471
1.202	-9.98	4.99	6.11	.2439	-.0369	-.0735
1.201	-9.98	5.01	8.13	.3237	-.0185	-.0989
1.201	-9.98	5.00	9.41	.3740	-.0037	-.1153
1.199	-.01	.78	-1.94	-.0713	.0398	.0230
1.200	-.04	.78	.06	.0031	.0371	-.0005
1.201	-.04	.77	2.08	.0795	.0399	-.0256
1.201	-.03	.75	4.08	.1620	.0483	-.0533
1.199	-.02	.75	6.10	.2395	.0616	-.0799
1.201	-.40	.74	8.12	.3145	.0795	-.1062
1.200	-.15	.74	8.58	.3321	.0846	-.1123
1.200	-.02	4.99	-1.93	-.0730	-.0605	.0171
1.201	-.00	5.02	.07	.0064	-.0642	-.0055

TABLE B4.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
1.201	.01	5.01	2.10	.0881	-.0607	-.0296
1.202	.07	5.00	4.11	.1730	-.0522	-.0555
1.199	.14	5.03	8.13	.3370	-.0202	-.1078
1.202	.05	5.00	8.91	.3665	-.0108	-.1176
1.200	.08	6.97	-1.94	-.0839	-.1089	.0222
1.199	.18	6.99	.07	-.0024	-.1129	-.0005
1.200	.23	7.00	2.08	.0797	-.1101	-.0237
1.202	.13	7.03	4.11	.1689	-.1022	-.0503
1.200	.05	7.00	8.14	.3391	-.0689	-.1035
1.201	.11	7.03	9.46	.3923	-.0539	-.1201
.603	2.25	1.00	-1.94	-.0728	.0156	.0045
.601	-.06	1.00	-1.92	-.0734	.0156	.0064
.604	-.03	1.00	.05	.0096	.0145	-.0053
.601	-.01	1.00	2.06	.0969	.0165	-.0189
.602	.01	.99	4.08	.1957	.0245	-.0364
.602	.02	.99	6.09	.2955	.0396	-.0547
.602	.05	.99	8.08	.3966	.0636	-.0724
.598	.04	.99	12.08	.5476	.1280	-.1012
.598	-.42	.98	15.32	.6360	.1927	-.1242
.602	-.04	2.00	-1.91	-.0694	.0911	-.0329
.600	-.03	2.00	.10	.0239	.0073	-.0343
.602	-.01	2.00	2.10	.1225	-.0660	-.0347
.601	-.06	2.00	4.08	.2259	-.0752	-.0469
.599	-.04	2.00	8.08	.4389	-.0341	-.0832
.600	-.10	2.00	12.10	.5987	.0340	-.1120
.599	-.01	2.00	15.36	.6932	.1007	-.1361
1.201	9.89	.79	-1.95	-.0727	.1288	.0041
1.202	9.76	.78	.11	.0115	.0483	-.0087
1.200	9.83	.77	2.09	.0910	.0400	-.0302
1.200	10.01	.75	4.11	.1728	.0490	-.0581
1.201	9.84	.73	6.11	.2518	.0628	-.0856
1.201	9.74	.72	8.10	.3255	.0811	-.1122
1.202	9.52	.79	-1.94	-.0639	.0385	.0190
1.201	10.17	4.99	-1.92	-.0610	-.0603	.0115
1.200	10.25	5.00	.07	.0184	-.0625	-.0120
1.201	10.08	5.02	2.08	.0993	-.0592	-.0368
1.201	10.06	5.01	4.09	.1887	-.0500	-.0650
1.200	9.79	5.01	8.12	.3548	-.0157	-.1193
1.200	10.04	6.98	-1.96	-.0700	-.1096	.0142
1.200	9.82	7.00	.08	.0157	-.1125	-.0103
1.201	10.04	7.02	2.10	.0998	-.1090	-.0353
1.201	9.95	7.03	4.12	.1879	-.1006	-.0618
1.199	9.82	6.98	8.11	.3595	-.0655	-.1161
1.200	9.83	6.99	8.71	.3841	-.0586	-.1240
1.203	-.11	9.08	-1.95	-.0948	-.1600	.0281
1.198	-.09	8.98	.11	-.0085	-.1626	.0046
1.200	-.04	8.99	4.13	.1694	-.1515	-.0458

TABLE B4.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
1.200	-.18	8.98	8.15	.3446	-.1176	-.0988
1.198	-.57	9.01	9.75	.4130	-.0992	-.1198
.900	-.42	1.03	-2.03	-.0956	.0171	.0198
.900	-.42	1.03	-.02	-.0024	.0151	.0040
.900	-.19	1.02	1.99	.0854	.0178	-.0109
.903	-.10	.98	3.99	.1773	.0280	-.0273
.900	.07	.97	5.98	.2790	.0443	-.0505
.900	.00	.95	8.00	.3748	.0695	-.0754
.897	.25	.94	11.32	.4932	.1209	-.1036
.899	.02	2.01	.02	.0164	-.0315	-.0084
.901	.02	2.01	3.99	.2085	-.0170	-.0449
.901	.03	2.00	7.98	.4158	.0266	-.0945
.901	.22	2.00	10.19	.4998	.0610	-.1133
.899	.02	3.51	-2.01	-.0896	-.0902	.0102
.900	.03	3.51	.02	.0133	-.0919	-.0077
.900	.04	3.51	1.99	.1130	-.0880	-.0264
.898	.07	3.51	4.03	.2232	-.0777	-.0480
.902	.14	3.51	8.03	.4323	-.0323	-.0973
.899	-.03	3.50	10.53	.5261	.0066	-.1159
.899	.01	3.49	-2.01	-.0874	-.0897	.0092
.900	.01	3.50	-.01	.0117	-.0914	-.0082
.899	-.14	5.00	-2.01	-.0877	-.1534	.0019
.901	-.13	4.99	-.00	.0181	-.1542	-.0160
.901	-.15	5.01	2.00	.1197	-.1510	-.0338
.901	-.12	5.00	4.00	.2332	-.1398	-.0565
.898	-.07	5.03	8.02	.4550	-.0966	-.1052
.900	-.09	5.00	10.14	.5383	-.0608	-.1221
.901	-4.81	1.03	-2.02	-.1013	.0174	.0224
.900	-4.95	1.03	-.01	-.0080	.0145	.0062
.899	-4.79	1.00	2.01	.0664	.0176	-.0014
.900	-4.48	.98	4.00	.1688	.0269	-.0222
.899	-4.29	.96	6.01	.2702	.0435	-.0453
.901	-4.56	.94	7.97	.3601	.0677	-.0684
.900	-4.74	.92	11.83	.4950	.1282	-.1014
.900	-5.18	3.51	-2.02	-.1118	-.0875	.0219
.900	-5.17	3.51	-.03	-.0108	-.0908	.0038
.899	-5.16	3.51	2.00	.0906	-.0877	-.0140
.901	-5.16	3.50	4.02	.1953	-.0775	-.0343
.900	-4.91	3.52	8.03	.4149	-.0339	-.0853
.899	-4.99	3.49	11.34	.5343	.0193	-.1116
.899	10.06	1.00	-2.00	-.0805	.0172	.0082
.902	10.28	1.00	-.00	.0151	.0157	-.0092
.903	10.28	1.00	1.99	.1104	.0202	-.0283
.901	10.28	.99	3.98	.2125	.0301	-.0496
.901	10.05	.98	5.97	.3127	.0470	-.0720
.899	10.08	.96	8.03	.4110	.0733	-.0973

TABLE B4.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.899	10.03	.95	9.84	.4794	.1010	-.1129
.902	10.25	3.51	-2.00	-.0541	-.0883	-.0155
.900	10.22	3.51	-.01	.0466	-.0890	-.0342
.900	10.09	3.50	1.99	.1521	-.0833	-.0543
.900	10.01	3.50	4.02	.2655	-.0713	-.0777
.901	9.90	3.52	8.01	.4919	-.0232	-.1331
.901	10.00	5.01	-2.02	-.0666	-.1513	-.0122
.902	10.12	5.01	-.01	.0379	-.1514	-.0299
.902	10.10	5.02	1.99	.1417	-.1468	-.0487
.899	9.97	4.99	3.99	.2570	-.1351	-.0717
.898	9.84	5.02	8.04	.4898	-.0884	-.1252
.899	9.81	5.00	8.65	.5164	-.0771	-.1310
.902	19.53	.95	-2.01	-.0604	.0204	-.0053
.902	19.62	.95	-.00	.0360	.0200	-.0240
.903	19.65	.95	1.97	.1371	.0255	-.0460
.901	19.67	.95	3.98	.2431	.0371	-.0709
.900	19.68	.95	5.98	.3502	.0557	-.0968
.899	19.60	.93	7.99	.4475	.0815	-.1211
.902	19.56	.93	8.18	.4539	.0846	-.1237
.899	19.52	3.50	-2.01	-.0464	-.0859	-.0213
.900	19.34	3.52	.02	.0562	-.0864	-.0399
.901	19.43	3.52	2.00	.1645	-.0799	-.0615
.899	19.46	3.51	3.99	.2759	-.0673	-.0844
.899	19.30	3.50	7.63	.4894	-.0228	-.1364
.901	19.36	5.01	-2.01	-.0596	-.1485	-.0159
.902	19.41	5.01	.02	.0463	-.1486	-.0339
.901	19.49	5.01	2.02	.1547	-.1429	-.0546
.901	19.50	5.00	4.02	.2676	-.1303	-.0773
.901	19.51	5.02	8.04	.5029	-.0810	-.1329
.603	19.53	.95	-2.03	-.0221	.0219	-.0146
.602	19.52	.95	-.03	.0632	.0222	-.0283
.603	19.52	.95	2.01	.1555	.0269	-.0436
.602	19.52	.95	3.97	.2497	.0363	-.0605
.600	19.52	.95	5.99	.3528	.0534	-.0796
.601	19.53	.94	7.98	.4536	.0790	-.0983
.601	19.53	.94	11.98	.6034	.1466	-.1272
.600	19.52	.93	15.54	.6984	.2206	-.1539
.601	19.51	3.51	-2.01	.0103	-.2133	-.0477
.600	19.51	3.51	.01	.1087	-.2120	-.0625
.602	19.51	3.51	2.00	.2084	-.2038	-.0775
.601	19.53	3.51	4.02	.3167	-.1935	-.0948
.601	19.53	3.51	8.01	.5371	-.1460	-.1313
.598	19.53	3.51	12.01	.7161	-.0723	-.1609
.598	19.52	3.50	15.62	.8358	.0121	-.1884
.601	19.53	5.02	-.03	.0967	-.3506	-.0602
.601	19.52	5.01	4.02	.3159	-.3330	-.0921
.600	19.52	4.98	8.02	.5512	-.2828	-.1292

TABLE B4.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CM
.600	19.52	5.00	12.02	.7390	-.2088	-.1582
.599	19.52	5.00	15.61	.8694	-.1238	-.1850
.601	9.86	.98	-2.01	-.0526	.0161	.0028
.601	9.85	.98	.01	.0362	.0160	-.0105
.603	9.82	.98	2.01	.1246	.0194	-.0255
.601	9.61	.98	4.00	.2214	.0284	-.0424
.599	9.61	.98	5.99	.3229	.0441	-.0609
.599	9.61	.97	8.01	.4248	.0690	-.0794
.601	9.37	.97	12.02	.5769	.1348	-.1085
.601	9.38	.96	15.45	.6673	.2036	-.1325
.600	10.58	3.51	-1.99	-.0065	-.2211	-.0363
.600	10.57	3.52	.02	.0952	-.2194	-.0520
.602	10.57	3.51	2.02	.1938	-.2124	-.0671
.601	10.57	3.51	3.98	.2984	-.2021	-.0837
.599	10.57	3.51	8.02	.5285	-.1565	-.1217
.602	10.58	3.52	12.01	.7032	-.0805	-.1513
.601	10.58	3.51	15.59	.8210	.0013	-.1791
.600	10.35	5.00	.01	.0897	-.3576	-.0566
.601	10.10	5.01	4.03	.3083	-.3406	-.0879
.601	10.11	5.02	8.03	.5417	-.2942	-.1239
.598	10.12	5.02	12.01	.7304	-.2215	-.1523
.601	10.35	5.03	15.57	.8594	-.1359	-.1785
.602	.91	3.51	-2.03	-.0735	-.2217	.0031
.606	1.16	3.51	-.01	.0275	-.2199	-.0116
.602	1.16	3.50	1.99	.1271	-.2188	-.0268
.600	1.16	3.50	4.00	.2295	-.2127	-.0432
.605	1.17	3.51	7.99	.4536	-.1684	-.0789
.598	1.17	3.50	12.00	.6325	-.1027	-.1089
.598	1.41	3.49	15.43	.7435	-.0291	-.1344
.601	.42	5.01	-.01	.0463	-.3641	-.0316
.601	-.07	5.01	4.02	.2559	-.3518	-.0592
.599	-.09	5.01	8.03	.4921	-.3100	-.0952
.600	-.01	5.01	12.03	.6790	-.2368	-.1234
.600	.07	5.01	15.45	.8012	-.1601	-.1482
.601	-4.92	1.00	-2.03	-.0779	.0149	.0160
.603	-4.91	1.00	-.01	.0073	.0140	.0038
.601	-4.94	1.00	1.99	.0925	.0161	-.0089
.602	-4.92	.99	4.00	.1881	.0232	-.0258
.603	-4.91	.99	5.97	.2899	.0379	-.0444
.601	-4.92	.99	8.00	.3902	.0612	-.0621
.601	-4.92	.99	11.97	.5427	.1243	-.0905
.599	-5.17	.97	15.40	.6381	.1932	-.1155
.599	-5.02	3.50	-2.03	-.1239	-.2159	.0243
.599	-5.05	3.50	-.02	-.0207	-.2214	.0099
.600	-5.04	3.50	1.97	.0793	-.2181	-.0044
.599	-5.04	3.49	4.01	.1846	-.2119	-.0201
.599	-4.99	3.50	7.99	.4068	-.1742	-.0554
.602	-4.83	3.50	12.05	.5829	-.1051	-.0840
.600	-4.87	3.50	15.33	.6899	-.0394	-.1075

TABLE B5.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; $\delta_v = 0^o$

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
1.203	0.00	.77	-2.01	-.0728	.0457	-.0006	.0263	-.0722	.0195	.0223	.0217
1.198	0.00	.77	.01	-.0007	.0426	.0011	.0264	-.0017	.0161	-.0000	.0011
1.200	0.00	.77	2.05	.0732	.0448	.0024	.0263	.0708	.0185	-.0227	-.0201
1.202	0.00	.76	4.03	.1494	.0524	.0040	.0267	.1454	.0256	-.0459	-.0419
1.202	0.00	.76	6.05	.2231	.0649	.0051	.0271	.2180	.0378	-.0699	-.0646
1.201	0.00	.76	8.06	.2953	.0825	.0067	.0278	.2886	.0548	-.0941	-.0874
1.201	0.00	.76	9.27	.3380	.0954	.0083	.0283	.3297	.0671	-.1086	-.1009
1.201	0.00	5.01	-2.01	-.0762	-.0591	-.0051	-.0779	-.0711	.0187	.0207	.0199
1.201	0.00	4.99	.03	-.0001	-.0619	-.0020	-.0778	.0019	.0159	-.0006	-.0012
1.202	0.00	4.97	2.01	.0747	-.0585	.0023	-.0770	.0724	.0185	-.0215	-.0216
1.201	0.00	5.00	4.02	.1589	-.0512	.0088	-.0775	.1501	.0263	-.0461	-.0449
1.199	0.00	4.98	8.03	.3130	-.0197	.0198	-.0753	.2932	.0556	-.0945	-.0912
1.201	0.00	4.99	9.71	.3763	-.0004	.0250	-.0739	.3512	.0735	-.1145	-.1099
1.201	0.00	7.01	-2.00	-.0759	-.1101	-.0065	-.1283	-.0694	.0182	.0192	.0192
1.202	0.00	7.02	-.01	-.0017	-.1134	-.0030	-.1290	.0013	.0156	-.0004	-.0013
1.202	0.00	7.01	2.04	.0782	-.1102	.0024	-.1284	.0758	.0182	-.0218	-.0227
1.203	0.00	6.99	4.02	.1583	-.1013	.0089	-.1268	.1495	.0255	-.0445	-.0448
1.202	0.00	7.03	8.04	.3206	-.0705	.0242	-.1255	.2965	.0550	-.0937	-.0922
1.200	0.00	7.03	9.88	.3913	-.0493	.0314	-.1242	.3599	.0749	-.1151	-.1125
1.200	0.00	8.99	.02	-.0015	-.1631	-.0069	-.1779	.0055	.0148	-.0003	-.0024
1.201	0.00	9.01	4.06	.1635	-.1521	.0101	-.1771	.1533	.0250	-.0447	-.0462
1.198	0.00	8.99	8.09	.3303	-.1190	.0286	-.1743	.3017	.0553	-.0932	-.0932
1.201	0.00	9.02	10.28	.4140	-.0928	.0396	-.1721	.3744	.0793	-.1183	-.1170
.903	0.00	.98	-1.99	-.0965	.0204	-.0017	.0054	-.0948	.0151	.0138	.0133
.900	0.00	.99	-.01	-.0126	.0169	-.0032	.0050	-.0094	.0119	.0006	-.0000
.898	0.00	.98	2.02	.0726	.0193	-.0049	.0054	.0775	.0139	-.0124	-.0131
.901	0.00	.98	4.03	.1648	.0281	-.0074	.0069	.1721	.0212	-.0273	-.0284
.902	0.00	1.00	6.05	.2561	.0438	-.0127	.0083	.2688	.0355	-.0442	-.0472
.897	0.00	1.00	8.04	.3427	.0662	-.0121	.0092	.3549	.0569	-.0638	-.0657
.896	0.00	.98	13.06	.4975	.1440	-.0043	.0165	.5017	.1274	-.0992	-.0955
.900	0.00	.95	13.06	.4969	.1449	-.0047	.0173	.5016	.1276	-.0998	-.0960
.901	0.00	2.01	.04	-.0011	-.0292	-.0008	-.0412	-.0003	.0120	-.0033	-.0023
.900	0.00	2.01	4.04	.1751	-.0186	-.0034	-.0405	.1786	.0219	-.0290	-.0296
.901	0.00	2.01	8.05	.3550	.0206	-.0039	-.0375	.3589	.0581	-.0652	-.0663
.901	0.00	2.01	13.29	.5230	.1028	.0082	-.0309	.5148	.1337	-.1022	-.0988
.902	0.00	3.52	-1.98	-.0924	-.0890	-.0040	-.1037	-.0884	.0146	.0105	.0108
.902	0.00	3.51	-.00	-.0026	-.0912	-.0019	-.1037	-.0007	.0125	-.0021	-.0023
.903	0.00	3.51	2.02	.0855	-.0884	-.0002	-.1033	.0857	.0150	-.0147	-.0152
.900	0.00	3.50	4.04	.1767	-.0808	-.0030	-.1029	.1798	.0221	-.0268	-.0296
.900	0.00	3.50	8.06	.3758	-.0403	.0082	-.0997	.3677	.0594	-.0681	-.0686
.904	0.00	3.51	13.44	.5502	.0470	.0254	-.0904	.5248	.1374	-.1054	-.1017
.902	0.00	5.00	-2.01	-.0966	-.1520	-.0075	-.1661	-.0891	.0141	.0111	.0113
.904	0.00	5.03	.01	-.0096	-.1548	-.0066	-.1667	-.0030	.0119	.0010	-.0007
.899	0.00	5.00	2.02	.0856	-.1539	-.0022	-.1679	.0878	.0140	-.0122	-.0143
.902	0.00	5.01	4.02	.1847	-.1444	.0030	-.1661	.1816	.0217	-.0280	-.0301
.901	0.00	5.00	8.04	.3901	-.1026	.0184	-.1621	.3717	.0596	-.0696	-.0699
.901	0.00	5.01	13.53	.5767	-.0132	.0420	-.1532	.5347	.1400	-.1073	-.1032
.601	0.00	1.01	-2.00	-.0835	.0133	-.0015	.0022	-.0820	.0111	.0099	.0098
.599	0.00	1.01	.02	-.0097	.0122	-.0057	.0024	-.0040	.0098	.0010	-.0006
.601	0.00	1.01	2.02	.0709	.0140	-.0059	.0028	.0768	.0112	-.0108	-.0118
.601	0.00	1.01	4.04	.1623	.0202	-.0049	.0029	.1672	.0173	-.0254	-.0254
.599	0.00	1.01	6.02	.2616	.0340	-.0033	.0035	.2649	.0305	-.0424	-.0412
.601	0.00	1.01	8.04	.3601	.0566	-.0013	.0043	.3614	.0523	-.0588	-.0564
.600	0.00	1.00	12.04	.5089	.1177	.0031	.0078	.5059	.1100	-.0850	-.0798
.600	0.00	.99	15.45	.5934	.1825	.0080	.0142	.5854	.1683	-.1074	-.0989
.600	0.00	1.99	.00	-.0022	-.0864	-.0035	-.0958	.0013	.0094	-.0023	-.0015
.601	0.00	2.01	4.04	.1778	-.0793	.0032	-.0973	.1746	.0180	-.0281	-.0268
.601	0.00	2.01	8.02	.3848	-.0422	.0144	-.0961	.3703	.0539	-.0613	-.0581
.599	0.00	2.01	12.04	.5444	.0199	.0269	-.0932	.5175	.1132	-.0875	-.0819
.601	0.00	2.01	15.41	.6435	.0877	.0382	-.0865	.6053	.1742	-.1112	-.1023
.601	0.00	3.49	-1.97	-.0875	-.2242	-.0118	-.2350	-.0757	.0108	.0086	.0088
.601	0.00	3.50	.05	.0060	-.2265	-.0033	-.2364	.0093	.0099	-.0036	-.0029
.602	0.00	3.50	2.05	.1010	-.2236	.0057	-.2357	.0953	.0121	-.0163	-.0148
.602	0.00	3.50	4.03	.1962	-.2168	.0137	-.2352	.1825	.0184	-.0295	-.0280
.603	0.00	3.50	7.03	.3589	-.1906	.0281	-.2332	.3308	.0427	-.0546	-.0521
.600	0.00	3.49	12.04	.5823	-.1134	.0545	-.2282	.5278	.1148	-.0888	-.0835

TABLE B5.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.600	0.00	3.50	15.36	.6868	-.0464	.0736	-.2210	.6131	.1747	-.1112	-.1030
.601	0.00	3.50	8.06	.4169	-.1773	.0331	-.2326	.3837	.0554	-.0625	-.0592
.601	0.00	5.00	-1.98	-.0916	-.3681	-.0196	-.3775	-.0720	.0094	.0084	.0087
.600	0.00	5.00	.04	.0087	-.3695	-.0051	-.3784	.0138	.0089	-.0041	-.0031
.602	0.00	5.00	2.03	.1102	-.3658	.0091	-.3770	.1012	.0112	-.0171	-.0152
.602	0.00	5.01	4.03	.2130	-.3594	.0227	-.3775	.1903	.0181	-.0308	-.0289
.602	0.00	5.00	6.03	.3243	-.3428	.0363	-.3750	.2880	.0322	-.0468	-.0445
.602	0.00	5.00	8.03	.4386	-.3184	.0520	-.3733	.3866	.0549	-.0632	-.0601
.600	0.00	5.00	15.40	.7399	-.1803	.1122	-.3586	.6277	.1783	-.1134	-.1048

TABLE B6.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; δ_v = 10°

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.601	0.00	1.01	-1.97	-.0741	.0150	.0023	.0027	-.0764	.0123	.0108	.0129
.598	0.00	1.01	.06	.0090	.0146	.0008	.0029	.0082	.0117	-.0002	.0016
.601	0.00	1.01	2.04	.0903	.0171	.0009	.0032	.0894	.0140	-.0127	-.0102
.602	0.00	1.00	4.05	.1863	.0246	.0021	.0037	.1842	.0208	-.0281	-.0243
.600	0.00	1.00	6.05	.2860	.0392	.0042	.0045	.2818	.0347	-.0455	-.0403
.599	0.00	1.00	8.05	.3868	.0628	.0068	.0057	.3799	.0571	-.0628	-.0560
.600	0.00	.99	12.06	.5329	.1264	.0123	.0104	.5206	.1160	-.0895	-.0793
.601	0.00	.98	15.39	.6139	.1905	.0175	.0171	.5963	.1734	-.1106	-.0966
.598	0.00	3.49	-1.96	-.0140	-.2229	.0495	-.2353	-.0634	.0124	-.0270	.0160
.600	0.00	3.48	.03	.0810	-.2193	.0585	-.2319	.0225	.0126	-.0395	.0038
.601	0.00	3.49	2.06	.1760	-.2142	.0679	-.2299	.1081	.0157	-.0527	-.0086
.601	0.00	3.49	4.05	.2779	-.2033	.0775	-.2265	.2004	.0232	-.0679	-.0230
.599	0.00	3.50	8.07	.4996	-.1608	.0996	-.2219	.4000	.0611	-.1032	-.0555
.601	0.00	3.51	12.07	.6677	-.0874	.1210	-.2097	.5467	.1223	-.1299	-.0797
.598	0.00	3.50	15.57	.7821	-.0105	.1435	-.1984	.6387	.1879	-.1542	-.1004
.600	0.00	3.52	.08	.0822	-.2227	.0593	-.2352	.0229	.0125	-.0407	.0033
.600	0.00	5.01	.08	.1178	-.3607	.0902	-.3724	.0276	.0117	-.0544	.0042
.600	0.00	5.02	4.07	.3282	-.3433	.1204	-.3668	.2079	.0234	-.0828	-.0226
.601	0.00	5.02	8.07	.5605	-.2922	.1515	-.3554	.4090	.0633	-.1173	-.0555
.599	0.00	5.01	12.11	.7449	-.2165	.1839	-.3416	.5610	.1251	-.1448	-.0804
.598	0.00	5.01	15.62	.8688	-.1333	.2150	-.3252	.6539	.1919	-.1686	-.1015
1.200	0.00	.77	-1.96	-.0639	.0451	.0053	.0261	-.0692	.0191	.0181	.0217
1.201	0.00	.77	.04	.0052	.0419	.0056	.0260	-.0004	.0160	-.0023	.0019
1.202	0.00	.77	2.03	.0768	.0445	.0066	.0259	.0702	.0186	-.0233	-.0181
1.201	0.00	.77	4.05	.1533	.0526	.0082	.0268	.1451	.0258	-.0471	-.0405
1.200	0.00	.77	6.07	.2274	.0649	.0093	.0269	.2181	.0380	-.0709	-.0631
1.199	0.00	.76	8.06	.2988	.0827	.0118	.0280	.2870	.0547	-.0948	-.0854
1.199	0.00	.75	9.19	.3390	.0949	.0136	.0287	.3254	.0661	-.1083	-.0979
1.200	0.00	5.03	-1.95	-.0540	-.0582	.0211	-.0771	-.0751	.0189	.0079	.0253
1.201	0.00	4.99	.07	.0232	-.0585	.0246	-.0751	-.0014	.0166	-.0131	.0042
1.201	0.00	4.99	2.08	.0979	-.0546	.0284	-.0739	.0695	.0193	-.0338	-.0163
1.200	0.00	4.99	4.05	.1779	-.0460	.0334	-.0724	.1444	.0265	-.0568	-.0386
1.199	0.00	4.98	8.08	.3337	-.0130	.0457	-.0687	.2880	.0557	-.1047	-.0841
1.198	0.00	4.98	9.03	.3697	-.0025	.0486	-.0679	.3211	.0654	-.1159	-.0947
1.199	0.00	6.99	-1.97	-.0475	-.1077	.0285	-.1263	-.0760	.0186	.0037	.0263
1.200	0.00	7.00	.08	.0308	-.1083	.0333	-.1248	-.0025	.0165	-.0171	.0050
1.201	0.00	7.02	2.06	.1055	-.1046	.0384	-.1235	.0671	.0189	-.0369	-.0149
1.201	0.00	7.02	4.10	.1904	-.0953	.0457	-.1218	.1447	.0265	-.0603	-.0378
1.200	0.00	7.01	8.12	.3492	-.0611	.0606	-.1168	.2885	.0557	-.1078	-.0834
1.199	0.00	7.00	8.91	.3806	-.0519	.0643	-.1157	.3164	.0637	-.1169	-.0922
.903	0.00	.99	-1.96	-.0905	.0208	-.0009	.0051	-.0896	.0158	.0130	.0131
.901	0.00	.99	.01	-.0088	.0174	-.0024	.0046	-.0064	.0128	.0000	-.0000
.903	0.00	.99	2.02	.0742	.0204	-.0042	.0054	.0783	.0150	-.0129	-.0131
.904	0.00	1.00	4.05	.1669	.0294	-.0086	.0070	.1754	.0224	-.0282	-.0296
.900	0.00	.99	6.05	.2690	.0458	-.0060	.0084	.2751	.0374	-.0506	-.0500
.901	0.00	.98	8.04	.3566	.0695	-.0029	.0105	.3596	.0590	-.0720	-.0691
.901	0.00	.94	12.07	.4915	.1331	.0074	.0180	.4841	.1152	-.1039	-.0963
.877	0.00	3.42	-1.94	-.0599	-.0889	.0246	-.1014	-.0845	.0125	-.0077	.0124
.903	0.00	3.53	-1.97	-.0667	-.0868	.0227	-.1024	-.0894	.0156	-.0048	.0140
.899	0.00	3.50	.03	.0247	-.0884	.0264	-.1018	-.0017	.0134	-.0186	.0006
.902	0.00	3.51	2.05	.1207	-.0832	.0307	-.0999	.0900	.0167	-.0344	-.0145
.901	0.00	3.51	4.06	.2263	-.0732	.0369	-.0983	.1894	.0251	-.0535	-.0323
.898	0.00	3.50	8.09	.4314	-.0289	.0506	-.0925	.3808	.0635	-.0983	-.0739
.900	0.00	3.50	10.55	.5239	.0111	.0596	-.0869	.4643	.0980	-.1170	-.0913
.901	0.00	4.95	-1.96	-.0563	-.1472	.0327	-.1618	-.0890	.0146	-.0108	.0155
.902	0.00	4.99	.04	.0386	-.1490	.0390	-.1621	-.0004	.0132	-.0253	.0016
.901	0.00	4.98	2.05	.1373	-.1441	.0464	-.1602	.0909	.0161	-.0414	-.0137
.901	0.00	4.99	4.06	.2473	-.1333	.0555	-.1582	.1918	.0249	-.0610	-.0319
.900	0.00	5.00	8.11	.4648	-.0859	.0761	-.1509	.3887	.0649	-.1078	-.0756
.900	0.00	4.99	10.16	.5466	-.0520	.0857	-.1455	.4609	.0935	-.1241	-.0907

TABLE B7.- AERODYNAMIC CHARACTERISTICS FOR THE AFT-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; $\delta_v = 20^o$

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.899	0.00	1.00	-1.99	-.0889	.0196	.0006	.0038	-.0895	.0157	.0135	.0148
.899	0.00	1.00	.01	-.0026	.0177	-.0012	.0038	-.0014	.0139	.0006	.0016
.899	0.00	1.01	2.00	.0793	.0211	-.0046	.0046	.0839	.0164	-.0120	-.0116
.901	0.00	1.00	4.02	.1783	.0310	-.0034	.0066	.1817	.0244	-.0312	-.0293
.901	0.00	.99	6.02	.2810	.0483	.0009	.0089	.2801	.0395	-.0545	-.0497
.902	0.00	.97	8.02	.3733	.0732	.0049	.0114	.3684	.0618	-.0780	-.0706
.899	0.00	.94	11.47	.4929	.1274	.0134	.0175	.4794	.1098	-.1048	-.0935
.901	0.00	3.51	-1.98	-.0381	-.0796	.0475	-.0942	-.0856	.0145	-.0207	.0129
.902	0.00	3.51	.02	.0572	-.0800	.0521	-.0941	.0051	.0140	-.0368	-.0020
.899	0.00	3.49	2.02	.1572	-.0738	.0576	-.0915	.0996	.0177	-.0544	-.0185
.901	0.00	3.49	4.05	.2666	-.0603	.0650	-.0877	.2016	.0274	-.0760	-.0383
.900	0.00	3.50	8.05	.4803	-.0128	.0836	-.0799	.3967	.0671	-.1244	-.0823
.899	0.00	3.50	8.48	.4980	-.0066	.0849	-.0793	.4131	.0727	-.1270	-.0848
.902	0.00	5.02	-1.97	-.0198	-.1395	.0675	-.1530	-.0874	.0136	-.0315	.0140
.903	0.00	5.03	.04	.0837	-.1388	.0755	-.1518	.0081	.0130	-.0489	-.0022
.904	0.00	5.03	2.07	.1879	-.1311	.0841	-.1484	.1038	.0173	-.0674	-.0198
.902	0.00	5.03	4.05	.2966	-.1179	.0940	-.1447	.2026	.0268	-.0881	-.0389
.898	0.00	5.02	7.83	.5120	-.0717	.1183	-.1356	.3938	.0639	-.1338	-.0811
.597	0.00	1.01	-2.01	-.0684	.0158	.0063	.0042	-.0746	.0116	.0038	.0087
.600	0.00	1.01	.03	.0142	.0150	.0056	.0043	.0086	.0107	-.0080	-.0029
.602	0.00	1.01	2.00	.0981	.0175	.0059	.0048	.0922	.0127	-.0208	-.0149
.603	0.00	1.00	4.00	.1914	.0250	.0072	.0058	.1842	.0192	-.0354	-.0284
.599	0.00	1.00	6.02	.2892	.0395	.0091	.0068	.2801	.0327	-.0523	-.0439
.604	0.00	1.00	8.04	.3890	.0636	.0117	.0084	.3773	.0552	-.0698	-.0599
.600	0.00	.99	12.01	.5340	.1267	.0174	.0140	.5166	.1128	-.0958	-.0826
.602	0.00	.97	15.51	.6178	.1940	.0224	.0213	.5954	.1727	-.1178	-.1007
.601	0.00	3.51	-1.97	.0482	-.2095	.0965	-.2203	-.0483	.0108	-.0570	.0128
.601	0.00	3.52	.03	.1455	-.2056	.1067	-.2176	.0389	.0117	-.0709	.0001
.601	0.00	3.52	2.05	.2462	-.1983	.1165	-.2141	.1297	.0158	-.0853	-.0134
.601	0.00	3.52	4.03	.3463	-.1862	.1265	-.2103	.2198	.0240	-.1003	-.0275
.602	0.00	3.52	8.03	.5653	-.1354	.1470	-.1985	.4183	.0630	-.1351	-.0606
.601	0.00	3.52	12.03	.7347	-.0595	.1688	-.1851	.5659	.1256	-.1621	-.0842
.599	0.00	3.51	15.80	.8511	.0289	.1906	-.1674	.6605	.1963	-.1883	-.1059
.602	0.00	5.03	.03	.2043	-.2357	.1555	-.3472	.0488	.0115	-.0910	.0017
.602	0.00	5.02	4.04	.4160	-.3104	.1850	-.3350	.2310	.0247	-.1198	-.0258
.600	0.00	5.01	8.07	.6493	-.2560	.2164	-.3211	.4329	.0650	-.1553	-.0592
.600	0.00	5.02	12.08	.8311	-.1731	.2488	-.3016	.5823	.1285	-.1822	-.0840
.601	0.00	5.01	15.77	.9621	-.0762	.2834	-.2758	.6787	.1996	-.2030	-.1056

TABLE B8.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH UPRIGHT SERN, DRY POWER

MACH	VEEP	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.398	-.01	1.00	-1.99	-.0981	.0153	-.0092	.0003	-.0889	.0150	.0081	-.0007
.401	-.01	1.00	-.01	-.0190	.0140	-.0118	.0008	-.0072	.0132	.0127	.0041
.401	-.01	1.00	2.03	.0644	.0147	-.0125	.0015	.0769	.0132	.0176	.0092
.398	-.01	1.00	4.04	.1525	.0183	-.0116	.0023	.1641	.0161	.0217	.0142
.401	-.01	1.00	6.02	.2402	.0259	-.0111	.0028	.2513	.0231	.0265	.0200
.400	-.01	.99	8.02	.3230	.0455	-.0104	.0039	.3334	.0416	.0300	.0246
.399	-.70	.99	12.03	.4860	.1145	-.0070	.0057	.4930	.1088	.0058	.0041
.403	-.01	.99	15.33	.5911	.1815	.0007	.0069	.5904	.1746	-.0151	-.0086
.404	-.00	2.01	-1.99	-.1038	-.1187	-.0142	-.1332	-.0896	.0145	.0057	-.0037
.402	-.00	2.01	.01	-.0177	-.1218	-.0188	-.1344	.0011	.0126	.0094	.0004
.401	-.00	2.01	2.01	.0733	-.1211	-.0229	-.1342	.0962	.0131	.0132	.0053
.401	-.00	2.00	4.03	.1686	-.1164	-.0267	-.1322	.1953	.0158	.0171	.0104
.400	-.00	2.00	8.00	.3492	-.0894	-.0339	-.1314	.3831	.0420	.0238	.0201
.399	-.01	1.98	12.03	.5265	-.0159	-.0379	-.1261	.5644	.1102	-.0025	-.0004
.401	-.25	1.96	15.38	.6473	.0606	-.0340	-.1194	.6813	.1801	-.0253	-.0140
.402	-.01	3.00	-2.01	-.1095	-.2407	-.0145	-.2555	-.0950	.0147	.0077	-.0061
.403	-.02	3.01	.01	-.0152	-.2410	-.0233	-.2532	.0081	.0123	.0110	-.0018
.405	-.02	3.01	2.01	.0774	-.2385	-.0312	-.2504	.1086	.0119	.0145	.0031
.399	-.02	3.00	4.00	.1726	-.2414	-.0401	-.2552	.2127	.0138	.0184	.0078
.400	-.02	3.01	8.02	.3692	-.2111	-.0563	-.2512	.4255	.0402	.0254	.0179
.400	-.03	3.01	12.01	.5566	-.1370	-.0668	-.2448	.6234	.1078	-.0002	-.0025
.399	-.03	3.01	15.26	.6787	-.0669	-.0727	-.2406	.7514	.1737	-.0214	-.0162
.400	-.02	5.01	.03	-.0432	-.4969	-.0533	-.5072	.0102	.0103	.0386	-.0053
.401	-.05	5.01	4.01	.1652	-.4924	-.0871	-.5000	.2522	.0076	.0460	.0047
.401	-.10	5.01	8.03	.3769	-.4625	-.1202	-.4924	.4971	.0299	.0519	.0143
.400	-.03	5.01	15.18	.7227	-.3185	-.1656	-.4759	.8883	.1574	.0035	-.0188
.601	-.06	1.01	-2.01	-.1038	.0152	-.0064	.0011	-.0975	.0141	.0051	-.0023
.600	-.04	1.00	.01	-.0190	.0139	-.0095	.0019	-.0095	.0120	.0115	.0041
.600	-.03	1.00	2.01	.0659	.0150	-.0100	.0025	.0759	.0125	.0178	.0102
.599	-.03	1.00	4.02	.1559	.0191	-.0094	.0032	.1653	.0159	.0238	.0171
.598	-.02	1.00	6.01	.2449	.0296	-.0091	.0041	.2541	.0255	.0305	.0242
.602	-.00	.99	8.02	.3331	.0520	-.0095	.0055	.3427	.0465	.0305	.0242
.597	.13	.99	12.03	.4776	.1183	-.0058	.0075	.4834	.1108	.0002	-.0020
.602	.16	.98	15.59	.5667	.1852	.0012	.0103	.5656	.1749	-.0172	-.0129
.599	-.03	2.01	-1.94	-.0997	-.0469	-.0033	-.0588	-.0965	.0119	-.0002	-.0039
.602	-.03	2.01	.01	-.0117	-.0478	-.0071	-.0582	-.0046	.0103	.0048	.0023
.601	-.03	2.01	2.01	.0778	-.0470	-.0091	-.0581	.0870	.0111	.0100	.0085
.600	-.03	2.03	4.03	.1696	-.0433	-.0109	-.0588	.1805	.0155	.0156	.0153
.598	.20	2.00	8.01	.3474	-.0086	-.0137	-.0556	.3611	.0470	.0193	.0211
.602	.02	2.01	12.03	.5042	.0605	-.0127	-.0532	.5168	.1137	-.0111	-.0044
.598	.02	2.00	15.61	.6039	.1301	-.0061	-.0516	.6100	.1817	-.0310	-.0155
.603	-.03	3.51	-1.98	-.1014	-.1273	-.0019	-.1388	-.0995	.0115	.0009	-.0053
.602	-.03	3.52	.01	-.0123	-.1296	-.0080	-.1392	-.0043	.0097	.0052	.0007
.601	-.04	3.52	2.02	.0829	-.1285	-.0127	-.1391	.0955	.0106	.0104	.0071
.601	-.03	3.52	4.02	.1770	-.1238	-.0173	-.1382	.1943	.0145	.0160	.0138
.599	-.04	3.51	8.02	.3645	-.0895	-.0260	-.1364	.3905	.0469	.0189	.0193
.599	-.03	3.51	12.01	.5274	-.0200	-.0307	-.1334	.5580	.1134	-.0116	-.0058
.602	.10	3.52	15.57	.6338	.0531	-.0292	-.1295	.6630	.1826	-.0332	-.0176
.602	.01	5.00	.02	-.0228	-.2137	-.0223	-.2234	-.0006	.0097	.0178	-.0004
.603	-.06	5.01	4.03	.1707	-.2089	-.0383	-.2210	.2090	.0121	.0291	.0128
.600	-.00	5.01	8.05	.3711	-.1737	-.0489	-.2185	.4199	.0448	.0270	.0173
.598	.07	4.99	15.52	.6473	-.0339	-.0639	-.2092	.7112	.1753	-.0229	-.0192
.901	.16	1.05	-1.99	-.1237	.0182	-.0040	-.0012	-.1197	.0194	.0013	-.0048
.898	-.32	1.04	-.01	-.0222	.0153	-.0122	.0003	-.0100	.0150	.0147	.0044
.899	-.51	1.03	2.04	.0900	.0177	-.0144	.0010	.1044	.0167	.0253	.0136
.898	.24	1.04	4.00	.2041	.0268	-.0137	.0009	.2178	.0259	.0277	.0174
.896	.37	1.05	6.00	.3110	.0450	-.0155	.0014	.3265	.0435	.0251	.0139
.898	-.21	1.03	8.01	.3575	.0735	-.0109	.0076	.3684	.0659	.0152	.0079
.899	-.27	.86	15.90	.4852	.2007	-.0074	.0348	.4926	.1659	-.0073	-.0183
.900	.04	2.03	.00	-.0159	-.0126	-.0088	-.0269	-.0071	.0143	.0091	.0032
.901	.05	1.99	4.02	.2102	.0007	-.0142	-.0255	.2244	.0262	.0224	.0152
.899	-.06	2.00	8.02	.3680	.0477	-.0090	-.0197	.3770	.0674	.0079	.0077
.899	.09	2.00	15.96	.5139	.1762	-.0030	.0001	.5170	.1761	-.0241	-.0184
.900	.36	3.53	-1.99	-.1222	-.0461	-.0005	-.0642	-.1217	.0180	-.0019	-.0070
.900	-.00	3.53	.00	-.0182	-.0494	-.0133	-.0641	-.0049	.0147	.0135	.0027
.903	.37	3.51	2.00	.0969	-.0457	-.0108	-.0625	.1077	.0168	.0156	.0105

TABLE B8.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.901	.34	3.50	4.02	.2149	-.0361	-.0160	-.0624	.2309	.0263	.0211	.0150
.899	.20	3.51	[illegible].02	.3754	.0111	-.0145	-.0563	.3898	.0673	.0065	.0064
.898	.11	3.51	[illegible].95	.5323	.1419	-.0125	-.0361	.5448	.1780	-.0267	-.0193
.899	-.13	5.00	-1.98	-.1250	-.0837	-.0018	-.1014	-.1232	.0177	.0004	-.0075
.901	-.11	5.01	-.01	-.0139	-.0867	-.0100	-.1009	-.0038	.0142	.0101	.0021
.899	-.15	5.01	2.04	.1003	-.0845	-.0160	-.1007	.1163	.0162	.0189	.0107
.902	-.15	5.02	4.01	.2167	-.0742	-.0223	-.1002	.2390	.0259	.0227	.0138
.901	-.18	5.02	8.03	.3809	-.0262	-.0225	-.0932	.4034	.0670	.0084	.0059
.897	-.00	4.99	15.85	.5373	.1018	-.0316	-.0714	.5689	.1731	-.0191	-.0201
.900	.13	7.01	-.01	-.0135	-.1383	-.0123	-.1521	-.0012	.0138	.0134	.0010
.899	.21	7.02	4.04	.2241	-.1261	-.0293	-.1515	.2534	.0254	.0267	.0132
.899	.06	7.02	8.02	.3880	-.0777	-.0331	-.1440	.4211	.0663	.0107	.0038
.900	.20	7.01	15.86	.5688	.0570	-.0409	-.1223	.6097	.1794	-.0252	-.0219
1.200	-.04	.82	-2.00	-.0833	.0526	.0138	.0236	-.0971	.0290	-.0021	.0091
1.202	-.08	.83	.01	-.0004	.0507	.0059	.0240	-.0063	.0267	-.0015	.0038
1.201	-.09	.77	2.02	.0738	.0539	-.0114	.0253	.0851	.0287	.0096	-.0024
1.201	.15	.74	4.02	.1601	.0628	-.0146	.0268	.1747	.0360	.0071	-.0087
1.200	.19	.71	6.01	.2460	.0781	-.0130	.0280	.2590	.0501	-.0009	-.0154
1.198	.01	.71	8.04	.3329	.0998	-.0072	.0283	.3401	.0716	-.0138	-.0232
1.199	-.22	.65	16.49	.6657	.2507	.0169	.0250	.6488	.2257	-.0651	-.0543
1.199	-.04	5.01	-2.00	-.1025	-.0046	-.0137	-.0361	-.0888	.0314	.0214	.0069
1.200	-.01	5.01	.02	-.0114	-.0082	-.0155	-.0357	.0040	.0276	.0161	.0019
1.201	.18	5.02	2.03	.0792	-.0056	-.0161	-.0352	.0954	.0296	.0097	-.0034
1.200	.16	5.01	4.01	.1696	.0033	-.0157	-.0346	.1853	.0379	.0013	-.0093
1.198	-.11	5.00	8.03	.3520	.0410	-.0094	-.0338	.3614	.0748	-.0237	-.0244
1.199	-.24	5.01	16.57	.7077	.1990	.0122	-.0396	.6955	.2386	-.0854	-.0578
1.201	.18	7.02	-2.00	-.0927	-.0337	-.0010	-.0644	-.0917	.0307	.0113	.0068
1.199	-.05	7.00	.01	-.0032	-.0374	-.0058	-.0647	.0026	.0273	.0071	.0017
1.199	-.06	7.00	2.04	.0867	-.0347	-.0103	-.0645	.0969	.0298	.0031	-.0037
1.200	.39	7.00	4.02	.1806	-.0252	-.0095	-.0639	.1901	.0387	-.0062	-.0097
1.200	-.07	7.00	4.02	.1795	-.0252	-.0093	-.0637	.1888	.0385	-.0063	-.0096
1.202	.16	7.02	8.02	.3621	.0125	-.0058	-.0637	.3679	.0761	-.0302	-.0250
1.198	-.07	6.99	16.59	.7244	.1732	.0085	-.0693	.7159	.2424	-.0908	-.0586
1.202	-.05	9.00	.02	.0071	-.0663	.0093	-.0927	-.0022	.0264	-.0063	.0018
1.199	-.05	8.99	4.05	.1953	-.0532	.0031	-.0934	.1922	.0402	-.0196	-.0095
1.198	-.06	9.02	8.02	.3795	-.0154	.0023	-.0950	.3773	.0796	-.0421	-.0247
1.197	.16	9.00	16.59	.7461	.1480	.0095	-.1012	.7365	.2492	-.1018	-.0596
1.200	-4.94	.83	-2.00	-.0893	.0540	.0049	.0231	-.0942	.0309	.0054	.0092
1.199	-4.93	.81	-.02	-.0049	.0516	.0004	.0240	-.0052	.0275	.0038	.0038
1.199	-5.12	.76	2.00	.0740	.0547	-.0112	.0256	.0852	.0291	.0100	-.0021
1.199	-5.10	.74	3.99	.1574	.0632	-.0155	.0271	.1728	.0361	.0083	-.0083
1.198	-5.14	.72	6.01	.2448	.0787	-.0138	.0285	.2587	.0502	.0004	-.0150
1.200	-5.38	.70	8.02	.3311	.1002	-.0088	.0290	.3399	.0712	-.0120	-.0233
1.198	-4.88	.62	16.46	.6635	.2510	.0151	.0266	.6484	.2244	-.0629	-.0543
1.198	-5.16	7.02	-1.99	-.0994	-.0343	-.0105	-.0656	-.0889	.0313	.0195	.0066
1.199	-4.93	7.03	.02	-.0071	-.0381	-.0136	-.0655	.0065	.0274	.0143	.0014
1.200	-4.95	7.04	2.03	.0835	-.0355	-.0165	-.0650	.1000	.0295	.0088	-.0039
1.201	-4.96	7.01	4.00	.1728	-.0262	-.0181	-.0640	.1909	.0378	.0015	-.0098
1.199	-4.97	7.00	8.04	.3584	.0117	-.0150	-.0630	.3734	.0747	-.0225	-.0251
1.198	-4.98	7.01	16.54	.7170	.1694	-.0003	-.0676	.7173	.2370	-.0817	-.0586
1.201	10.08	.81	-2.00	-.0808	.0532	.0152	.0241	-.0960	.0291	-.0028	.0096
1.201	9.57	.82	-.04	-.0044	.0512	.0030	.0240	-.0075	.0272	.0016	.0042
1.201	10.03	.78	2.06	.0813	.0549	-.0061	.0252	.0874	.0297	.0045	-.0019
1.202	10.04	.76	3.99	.1632	.0632	-.0073	.0259	.1705	.0373	.0005	-.0077
1.201	10.23	.7[illegible]	[illegible].01	.2506	.0785	-.0065	.0266	.2571	.0519	-.0075	-.0147
1.201	10.10	.7[illegible]	[illegible].01	.3370	.1000	-.0014	.0265	.3384	.0734	-.0203	-.0228
1.200	10.08	.7[illegible]	16.50	.6717	.2514	.0210	.0225	.6507	.2289	-.0707	-.0543
1.200	10.06	5.00	-2.99	-.0752	-.0023	.0256	-.0303	-.1008	.0279	-.0129	.0087
1.203	10.03	5.03	.01	.0143	-.0042	.0240	-.0305	-.0097	.0263	-.0190	.0035
1.200	10.03	5.02	2.02	.1055	-.0002	.0238	-.0310	.0817	.0307	-.0263	-.0016
1.200	10.03	5.01	4.03	.1968	.0102	.0238	-.0314	.1730	.0416	-.0343	-.0073
1.199	10.04	5.02	8.03	.3779	.0494	.0278	-.0336	.3501	.0830	-.0569	-.0220
1.199	10.03	5.01	16.74	.7418	.2171	.0478	-.0446	.6940	.2617	-.1211	-.0578
1.201	9.77	7.00	-2.01	-.0782	-.0323	.0224	-.0606	-.1006	.0283	-.0082	.0079
1.201	10.00	7.01	-.00	.0117	-.0347	.0186	-.0609	-.0069	.0262	-.0133	.0027
1.202	10.23	7.01	2.04	.1111	-.0292	.0239	-.0601	.0872	.0309	-.0267	-.0023
1.201	9.61	7.02	4.02	.1966	-.0207	.0160	-.0615	.1807	.0408	-.0285	-.0082
1.200	10.24	7.00	8.03	.3837	.0202	.0232	-.0628	.3606	.0830	-.0558	-.0229
1.198	10.26	6.98	16.71	.7501	.1877	.0354	-.0723	.7147	.2600	-.1179	-.0586

TABLE B8.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.400	20.16	1.01	-2.02	-.0650	.0174	.0138	.0035	-.0788	.0139	-.0114	-.0006
.402	20.19	1.01	-.02	.0162	.0169	.0112	.0033	.0050	.0136	-.0083	.0037
.400	20.20	1.01	1.99	.0988	.0189	.0109	.0033	.0879	.0156	-.0047	.0084
.400	20.20	1.02	3.98	.1844	.0203	.0118	.0034	.1725	.0169	-.0034	.0115
.400	20.20	1.02	5.98	.2713	.0291	.0122	.0030	.2591	.0261	.0021	.0176
.400	20.05	1.02	7.99	.3491	.0489	.0108	.0029	.3384	.0460	.0073	.0220
.399	20.05	1.02	11.99	.5181	.1207	.0142	.0033	.5039	.1173	-.0166	.0022
.401	20.29	1.02	15.36	.6285	.1921	.0228	.0037	.6057	.1884	-.0378	-.0108
.402	19.89	3.51	-2.02	.0971	-.2746	.1485	-.2729	-.0515	-.0017	-.1480	-.0146
.402	19.88	3.50	.02	.1953	-.2685	.1399	-.2777	.0554	.0092	-.1459	-.0110
.402	20.02	3.51	1.99	.3150	-.2500	.1480	-.2736	.1670	.0235	-.1609	-.0075
.401	20.02	3.50	3.99	.4136	-.2395	.1396	-.2801	.2740	.0405	-.1589	-.0028
.400	20.02	3.51	8.03	.6022	-.1950	.1135	-.2889	.4887	.0938	-.1507	.0072
.399	20.02	3.50	12.03	.7987	-.1082	.0911	-.2983	.7075	.1900	-.1724	-.0128
.401	20.02	3.51	15.45	.9340	-.0157	.0776	-.3009	.8564	.2852	-.1937	-.0289
.599	20.04	1.02	-2.02	-.0809	.0147	.0109	.0033	-.0918	.0114	-.0117	-.0033
.599	20.01	1.03	-.02	.0044	.0141	.0084	.0033	-.0040	.0108	-.0065	.0028
.600	19.96	1.03	2.03	.0935	.0161	.0077	.0034	.0858	.0127	-.0012	.0093
.602	19.81	1.03	4.01	.1816	.0214	.0087	.0036	.1730	.0178	.0039	.0158
.598	19.80	1.03	5.99	.2684	.0323	.0078	.0036	.2606	.0287	.0116	.0230
.599	19.81	1.03	8.00	.3526	.0545	.0061	.0040	.3465	.0504	.0124	.0225
.600	19.96	1.03	12.00	.5054	.1240	.0119	.0052	.4935	.1188	-.0183	-.0026
.602	19.82	1.02	15.65	.5968	.1945	.0213	.0065	.5755	.1879	-.0375	-.0141
.601	20.20	3.52	-1.98	.0140	-.1115	.0936	-.1133	-.0796	.0018	-.0961	-.0114
.598	20.21	3.50	-.01	.1052	-.1087	.0893	-.1171	.0159	.0084	-.0911	-.0055
.601	20.20	3.51	2.01	.1987	-.1017	.0855	-.1190	.1132	.0173	-.0867	.0007
.602	20.21	3.51	4.02	.2914	-.0919	.0802	-.1211	.2112	.0292	-.0820	.0076
.600	20.19	3.51	8.00	.4698	-.0542	.0650	-.1266	.4048	.0724	-.0726	.0166
.602	20.21	3.52	12.04	.6404	.0242	.0564	-.1308	.5840	.1549	-.1002	-.0097
.600	20.24	3.51	15.77	.7583	.1073	.0545	-.1345	.7037	.2418	-.1207	-.0229
.603	20.22	5.02	.03	.1605	-.1730	.1324	-.1801	.0281	.0071	-.1392	-.0119
.598	20.21	5.00	4.04	.3513	-.1555	.1179	-.1903	.2334	.0349	-.1317	-.0010
.601	20.22	5.01	8.02	.5365	-.1119	.0970	-.1959	.4395	.0841	-.1211	.0091
.600	20.18	5.01	15.94	.8462	.0632	.0689	-.2072	.7772	.2704	-.1691	-.0341
.899	20.04	1.07	-2.01	-.1109	.0174	.0101	.0012	-.1210	.0163	-.0134	-.0069
.902	20.05	1.07	-.05	-.0034	.0153	.0075	.0013	-.0109	.0140	-.0040	.0022
.905	20.20	1.07	2.01	.1086	.0189	.0060	.0016	.1026	.0173	.0039	.0107
.901	20.05	1.07	3.99	.2189	.0292	.0038	.0014	.2151	.0278	.0089	.0147
.899	19.57	1.07	6.01	.3297	.0480	-.0012	.0007	.3309	.0474	.0089	.0110
.899	20.30	1.05	8.03	.3898	.0761	.0054	.0048	.3845	.0713	.0002	.0074
.898	20.04	.96	15.94	.5209	.2080	.0116	.0272	.5093	.1808	-.0270	-.0169
.901	20.02	3.51	-2.02	-.0798	-.0378	.0554	-.0489	-.1352	.0111	-.0572	-.0102
.900	20.02	3.51	.04	.0357	-.0390	.0510	-.0507	-.0153	.0118	-.0483	-.0020
.901	20.02	3.51	2.04	.1465	-.0338	.0460	-.0523	.1005	.0185	-.0392	.0073
.900	20.01	3.51	4.00	.2582	-.0224	.0397	-.0536	.2186	.0312	-.0334	.0129
.902	19.83	3.53	8.02	.4450	.0250	.0299	-.0559	.4151	.0809	-.0397	.0034
.900	19.79	3.51	16.17	.6220	.1736	.0354	-.0443	.5867	.2180	-.0760	-.0217
.900	19.76	4.99	-2.00	-.0597	-.0693	.0795	-.0774	-.1392	.0081	-.0809	-.0127
.901	20.25	5.01	.01	.0584	-.0678	.0791	-.0780	-.0206	.0102	-.0778	-.0053
.902	20.25	5.02	2.02	.1708	-.0611	.0739	-.0800	.0969	.0189	-.0689	.0039
.901	20.25	5.01	4.00	.2827	-.0491	.0661	-.0825	.2166	.0333	-.0624	.0101
.898	20.25	5.00	8.04	.4810	-.0010	.0510	-.0875	.4300	.0864	-.0670	.0010
.899	20.24	5.01	16.25	.6727	.1556	.0469	-.0795	.6257	.2351	-.1016	-.0265
.602	10.05	1.02	-2.00	-.0932	.0137	.0051	.0036	-.0983	.0101	-.0058	-.0035
.603	10.04	1.02	-.03	-.0110	.0126	.0017	.0038	-.0127	.0088	.0000	.0028
.600	10.27	1.02	1.98	.0767	.0141	.0010	.0043	.0757	.0098	.0061	.0095
.601	10.27	1.02	3.97	.1646	.0187	.0017	.0045	.1629	.0142	.0117	.0162
.601	10.28	1.01	6.02	.2563	.0298	.0014	.0048	.2548	.0249	.0191	.0235
.600	10.27	1.01	8.00	.3380	.0510	.0002	.0056	.3378	.0453	.0203	.0238
.599	10.28	1.01	12.01	.4872	.1189	.0041	.0069	.4831	.1120	-.0098	-.0020
.604	9.40	1.00	15.59	.5800	.1876	.0127	.0091	.5673	.1787	-.0278	-.0128
.600	9.99	3.50	-1.99	-.0440	-.1238	.0508	-.1295	-.0948	.0056	-.0484	-.0080
.601	9.98	3.50	.05	.0510	-.1223	.0452	-.1307	.0059	.0084	-.0443	-.0018
.603	9.99	3.51	2.02	.1417	-.1185	.0388	-.1317	.1028	.0132	-.0407	.0044
.602	9.99	3.51	4.03	.2364	-.1116	.0335	-.1328	.2029	.0212	-.0364	.0110
.601	9.99	3.51	8.01	.4188	-.0755	.0214	-.1345	.3975	.0589	-.0280	.0194

TABLE B8.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.601	10.00	3.51	12.01	.5894	-.0002	.0147	-.1354	.5746	.1352	-.0589	-.0074
.607	9.76	3.53	15.71	.6994	.0791	.0120	-.1337	.6873	.2128	-.0769	-.0198
.603	9.99	5.01	-.01	.0916	-.1957	.0830	-.2036	.0086	.0079	-.0844	-.0058
.600	9.99	5.01	4.02	.2870	-.1833	.0666	-.2105	.2203	.0272	-.0768	.0072
.600	9.99	5.01	8.01	.4738	-.1439	.0462	-.2133	.4276	.0694	-.0678	.0169
.599	10.25	5.01	15.78	.7796	.0212	.0277	-.2186	.7519	.2398	-.1195	-.0233
.900	9.90	1.06	-2.04	-.1220	.0174	.0025	-.0006	-.1245	.0180	-.0056	-.0060
.901	9.76	1.06	-.03	-.0115	.0148	-.0011	-.0002	-.0103	.0150	.0041	.0033
.900	9.78	1.06	1.98	.1009	.0175	-.0010	.0004	.1019	.0172	.0112	.0115
.899	9.76	1.06	4.01	.2167	.0278	-.0014	.0004	.2181	.0274	.0147	.0153
.899	9.78	1.07	5.98	.3214	.0461	-.0066	.0002	.3280	.0459	.0146	.0115
.898	10.28	1.04	8.02	.3757	.0744	-.0019	.0055	.3776	.0689	.0073	.0081
.900	9.94	.91	15.87	.5031	.2038	.0008	.0315	.5023	.1723	-.0157	-.0172
.900	9.52	3.52	-2.00	-.1002	-.0446	.0283	-.0586	-.1285	.0139	-.0280	-.0082
.899	10.15	3.52	.01	.0156	-.0456	.0275	-.0582	-.0119	.0126	-.0232	.0004
.901	10.23	3.51	2.02	.1258	-.0411	.0207	-.0584	.1051	.0173	-.0144	.0095
.901	10.23	3.51	4.01	.2389	-.0304	.0153	-.0590	.2236	.0286	-.0085	.0141
.898	10.05	3.50	7.99	.4156	.0163	.0109	-.0576	.4047	.0739	-.0183	.0059
.896	10.39	3.50	16.03	.5828	.1563	.0129	-.0427	.5699	.1990	-.0522	-.0194
.899	10.01	4.99	-2.02	-.0850	-.0783	.0492	-.0899	-.1341	.0116	-.0486	-.0102
.900	10.00	5.00	.01	.0269	-.0795	.0428	-.0912	-.0160	.0117	-.0394	-.0015
.900	9.98	5.00	2.01	.1390	-.0748	.0346	-.0922	.1044	.0175	-.0303	.0080
.900	9.81	4.99	4.05	.2572	-.0631	.0267	-.0932	.2306	.0301	-.0239	.0133
.900	10.01	4.99	8.03	.4431	-.0137	.0195	-.0925	.4232	.0788	-.0349	.0042
.899	9.98	5.00	16.10	.6175	.1304	.0146	-.0795	.6029	.2099	-.0668	-.0212
.900	-5.18	1.03	-2.01	-.1303	.0192	-.0131	.0004	-.1172	.0187	.0094	-.0048
.899	-5.18	1.02	-.00	-.0252	.0159	-.0177	.0015	-.0075	.0144	.0208	.0048
.901	-4.84	1.03	1.96	.0836	.0177	-.0175	.0020	.1011	.0158	.0279	.0128
.900	-4.97	1.03	4.03	.2012	.0273	-.0188	.0023	.2200	.0250	.0321	.0165
.900	-4.75	1.04	6.01	.3102	.0463	-.0200	.0029	.3302	.0434	.0285	.0125
.898	-5.16	1.02	7.99	.3542	.0736	-.0133	.0090	.3675	.0645	.0186	.0084
.900	-5.13	.88	15.85	.4898	.2017	-.0096	.0361	.4994	.1656	-.0045	-.0183
.901	-5.19	3.51	-2.03	-.1383	-.0434	-.0209	-.0641	-.1175	.0207	.0185	-.0049
.901	-5.17	3.51	.07	-.0240	-.0475	-.0272	-.0631	.0032	.0156	.0285	.0046
.902	-5.16	3.52	2.01	.0846	-.0455	-.0314	-.0621	.1160	.0166	.0366	.0123
.900	-5.16	3.51	4.03	.2004	-.0365	-.0359	-.0612	.2362	.0247	.0410	.0158
.899	-5.08	3.51	8.02	.3599	.0107	-.0276	-.0542	.3875	.0649	.0187	.0065
.898	-4.99	3.51	15.88	.5216	.1383	-.0269	-.0328	.5486	.1711	-.0130	-.0193
.602	-4.95	1.00	-2.02	-.1141	.0163	-.0122	.0024	-.1018	.0139	.0114	-.0015
.601	-4.95	1.00	.04	-.0257	.0150	-.0152	.0033	-.0105	.0116	.0185	.0054
.601	-4.95	.99	2.01	.0592	.0157	-.0158	.0043	.0750	.0115	.0250	.0118
.602	-4.95	.99	3.99	.1459	.0194	-.0152	.0030	.1611	.0144	.0310	.0185
.600	-4.94	.99	5.99	.2353	.0294	-.0147	.0059	.2500	.0235	.0373	.0253
.603	-4.75	.99	8.02	.3218	.0514	-.0143	.0072	.3362	.0442	.0366	.0253
.602	-4.95	.99	12.01	.4678	.1177	-.0100	.0099	.4778	.1079	.0061	-.0010
.601	-4.78	.98	15.54	.5574	.1834	-.0029	.0130	.5601	.1705	-.0101	-.0111
.602	-4.93	3.48	-2.00	-.1295	-.1247	-.0270	-.1394	-.1025	.0148	.0237	-.0034
.604	-4.86	3.50	-.00	-.0372	-.1278	-.0318	-.1394	-.0054	.0116	.0284	.0024
.600	-4.90	3.50	2.00	.0529	-.1307	-.0367	-.1402	.0896	.0094	.0320	.0072
.600	-4.94	3.49	4.03	.1502	-.1261	-.0414	-.1382	.1917	.0120	.0384	.0146
.600	-4.99	3.49	8.00	.3404	-.0927	-.0489	-.1349	.3893	.0422	.0408	.0210
.597	-5.22	3.49	11.99	.5032	-.0254	-.0528	-.1309	.5560	.1055	.0079	-.0057
.601	-4.86	3.50	15.52	.6106	.0464	-.0482	-.1244	.6588	.1708	-.0134	-.0167

TABLE B9.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH INVERTED SERN, DRY POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.402	-.10	1.00	-1.99	-.0385	.0144	.0130	.0014	-.0515	.0130	-.0149	-.0080
.400	-.10	1.00	.01	.0403	.0150	.0091	.0020	.0312	.0130	-.0116	-.0035
.400	-.10	1.00	2.00	.1215	.0178	.0081	.0033	.1134	.0145	-.0059	.0022
.401	-.11	1.00	4.02	.2083	.0229	.0082	.0026	.2001	.0203	-.0015	.0075
.402	-.10	1.00	6.01	.2966	.0326	.0093	.0032	.2873	.0294	.0032	.0136
.400	-.13	1.00	8.00	.3784	.0539	.0074	.0037	.3710	.0502	.0085	.0175
.400	-.15	1.00	12.03	.5423	.1250	.0081	.0051	.5343	.1199	-.0079	.0029
.400	-.15	1.00	15.38	.6509	.1999	.0174	.0068	.6335	.1931	-.0332	-.0138
.400	.08	2.02	-2.00	-.0360	-.1213	.0171	-.1317	-.0531	.0104	-.0230	-.0109
.400	.09	2.02	.02	.0511	-.1213	.0107	-.1327	.0405	.0114	-.0210	-.0070
.401	.09	2.03	2.01	.1404	-.1184	.0058	-.1329	.1346	.0146	-.0171	-.0020
.401	.09	2.03	4.01	.2318	-.1132	.0018	-.1332	.2301	.0200	-.0123	.0036
.400	.08	2.02	8.03	.4169	-.0788	-.0071	-.1316	.4239	.0528	-.0048	.0133
.400	.09	2.00	12.03	.5924	-.0005	-.0110	-.1263	.6034	.1258	-.0265	-.0034
.398	.08	2.00	15.34	.7130	.0756	-.0099	-.1245	.7230	.2001	-.0503	-.0187
.402	.09	3.51	-1.99	-.0395	-.3015	.0241	-.3104	-.0636	.0088	-.0278	-.0139
.405	.10	3.53	.01	.0581	-.2973	.0125	-.3074	.0457	.0101	-.0235	-.0092
.403	.10	3.51	2.03	.1544	-.2962	.0022	-.3094	.1522	.0131	-.0209	-.0045
.402	.09	3.52	4.01	.2520	-.2919	-.0094	-.3112	.2614	.0193	-.0160	.0009
.400	.09	3.52	8.02	.4491	-.2588	-.0318	-.3109	.4809	.0521	-.0087	.0109
.401	.09	3.51	12.04	.6412	-.1781	-.0489	-.3043	.6901	.1262	-.0317	-.0062
.400	.09	3.51	15.33	.7730	-.1009	-.0590	-.3017	.8320	.2008	-.0553	-.0219
.399	.08	5.02	.02	.1067	-.4995	.0479	-.5078	.0588	.0083	-.0685	-.0139
.400	.08	5.02	4.03	.3129	-.4840	.0107	-.5073	.3021	.0232	-.0611	-.0032
.404	.08	5.03	8.05	.5239	-.4359	-.0247	-.4978	.5486	.0619	-.0536	.0072
.401	.28	5.03	15.32	.8749	-.2717	-.0774	-.4938	.9523	.2221	-.0999	-.0252
.599	.11	1.00	-1.99	-.0503	.0143	.0136	.0029	-.0639	.0114	-.0170	-.0100
.600	.11	1.00	.00	.0326	.0149	.0105	.0029	.0221	.0120	-.0116	-.0037
.600	.10	1.00	2.02	.1169	.0174	.0078	.0032	.1092	.0142	-.0047	.0027
.600	.09	1.00	4.01	.2066	.0233	.0083	.0033	.1982	.0199	.0018	.0098
.600	.10	1.00	6.01	.2938	.0353	.0081	.0035	.2857	.0318	.0088	.0169
.601	-.15	1.00	8.01	.3760	.0583	.0042	.0037	.3718	.0545	.0089	.0140
.601	-.21	1.00	12.03	.5258	.1271	.0069	.0059	.5189	.1213	-.0128	-.0046
.599	-.19	.99	15.68	.6255	.2029	.0185	.0087	.6070	.1943	-.0355	-.0183
.601	.05	2.04	-1.99	-.0564	-.0481	.0125	-.0581	-.0689	.0101	-.0174	-.0113
.601	.06	2.01	.02	.0314	-.0467	.0081	-.0569	.0233	.0101	-.0129	-.0052
.604	.06	2.02	2.04	.1220	-.0440	.0060	-.0568	.1160	.0128	-.0075	.0013
.601	.06	2.02	4.02	.2127	-.0382	.0038	-.0568	.2089	.0186	-.0010	.0083
.602	.06	2.02	8.02	.3937	-.0010	-.0007	-.0559	.3944	.0549	.0015	.0119
.597	.17	2.01	12.01	.5509	.0686	.0008	-.0548	.5501	.1234	-.0226	-.0063
.600	.06	2.01	15.71	.6571	.1475	.0078	-.0523	.6493	.1998	-.0475	-.0218
.601	.05	3.51	-1.99	-.0554	-.1287	.0177	-.1382	-.0730	.0096	-.0199	-.0121
.601	.04	3.51	.02	.0356	-.1285	.0105	-.1384	.0251	.0099	-.0160	-.0063
.601	.05	3.52	2.05	.1280	-.1257	.0053	-.1383	.1226	.0126	-.0110	-.0000
.602	.04	3.52	4.05	.2230	-.1192	-.0003	-.1378	.2233	.0186	-.0041	.0071
.601	.05	3.51	8.01	.4115	-.0809	-.0107	-.1363	.4222	.0554	-.0020	.0108
.599	.07	3.51	12.04	.5729	-.0108	-.0168	-.1347	.5897	.1239	-.0256	-.0079
.597	.11	3.51	15.67	.6845	.0674	-.0158	-.1318	.7002	.1992	-.0498	-.0231
.600	.05	5.02	.01	.0534	-.2153	.0260	-.2247	.0274	.0094	-.0344	-.0080
.602	.06	5.03	4.01	.2467	-.2037	.0080	-.2241	.2387	.0203	-.0241	.0053
.601	.08	5.03	8.03	.4404	-.1647	-.0090	-.2240	.4495	.0593	-.0218	.0095
.600	-.05	5.03	15.70	.7365	-.0068	-.0209	-.2187	.7574	.2119	-.0753	-.0250
.901	-.20	1.05	-2.02	-.1028	.0183	.0019	-.0003	-.1047	.0185	-.0111	-.0127
.898	-.18	1.05	.02	.0052	.0157	-.0036	.0004	.0088	.0153	.0003	-.0031
.901	-.19	1.04	2.01	.1122	.0187	-.0068	.0011	.1190	.0176	.0109	.0058
.898	-.19	1.03	4.03	.2228	.0293	-.0091	.0022	.2318	.0271	.0172	.0107
.899	-.20	1.04	6.02	.3274	.0499	-.0040	.0035	.3314	.0464	.0128	.0109
.899	-.20	1.03	8.00	.4033	.0767	-.0024	.0051	.4057	.0716	.0021	.0018
.900	-.20	.87	16.04	.5383	.2145	.0158	.0265	.5224	.1879	-.0313	-.0196
.902	.08	2.03	.02	.0174	-.0113	.0080	-.0254	.0094	.0141	-.0111	-.0050
.899	.09	2.02	4.03	.2376	.0024	-.0004	-.0258	.2380	.0282	.0044	.0087
.901	-.14	2.02	8.03	.4153	.0512	.0002	-.0226	.4151	.0738	-.0059	.0007
.898	-.15	2.02	16.08	.5585	.1875	.0103	-.0055	.5482	.1930	-.0384	-.0219
.902	.07	3.52	-1.98	-.0906	-.0458	.0181	-.0620	-.1086	.0163	-.0239	-.0150
.900	.08	3.51	.00	.0200	-.0480	.0125	-.0623	.0075	.0143	-.0154	-.0058
.901	.08	3.52	2.02	.1297	-.0443	.0067	-.0623	.1230	.0180	-.0068	.0030
.901	.08	3.52	4.02	.2440	-.0334	.0004	-.0626	.2435	.0291	-.0007	.0071
.896	-.13	3.51	8.03	.4274	.0148	-.0017	-.0598	.4291	.0746	-.0111	-.0000
.898	-.22	3.51	16.06	.5733	.1525	-.0022	-.0407	.5756	.1932	-.0386	-.0233

TABLE B9.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.897	.16	5.02	-2.01	-.0894	-.0858	.0230	-.1011	-.1124	.0154	-.0283	-.0162
.900	.06	5.02	.02	.0240	-.0867	.0158	-.1007	.0083	.0140	-.0195	-.0064
.899	.01	5.01	2.00	.1353	-.0830	.0085	-.1008	.1268	.0178	-.0109	.0028
.900	.01	5.01	4.02	.2499	-.0722	.0007	-.1009	.2492	.0287	-.0042	.0076
.897	-.09	5.01	8.04	.4368	-.0224	-.0037	-.0980	.4406	.0756	-.0167	-.0007
.900	.08	5.02	16.10	.6008	.1199	-.0048	-.0805	.6055	.2004	-.0521	-.0249
.903	.14	7.04	.00	.0222	-.1376	.0135	-.1515	.0087	.0139	-.0199	-.0067
.901	.19	7.02	4.02	.2538	-.1229	-.0055	-.1517	.2594	.0287	-.0058	.0061
.895	.02	6.98	8.05	.4420	-.0730	-.0121	-.1481	.4540	.0751	-.0191	-.0014
.902	-.15	7.01	16.01	.6028	.0679	-.0301	-.1249	.6329	.1928	-.0437	-.0260
1.200	.03	.78	-2.00	-.0742	.0556	.0121	.0253	-.0863	.0303	-.0034	.0055
1.200	.01	.82	-.00	.0016	.0523	-.0025	.0240	.0040	.0283	.0039	-.0006
1.202	-.00	.81	2.01	.0842	.0530	-.0095	.0235	.0937	.0295	.0045	-.0063
1.200	.00	.79	4.00	.1730	.0620	-.0063	.0242	.1793	.0378	-.0040	-.0123
1.200	.01	.78	6.01	.2606	.0773	-.0028	.0243	.2635	.0529	-.0136	-.0189
1.200	.01	.76	8.02	.3457	.0982	.0013	.0237	.3443	.0745	-.0250	-.0262
1.199	-.02	.72	16.62	.6944	.2568	.0348	.0168	.6595	.2400	-.0860	-.0569
1.200	-.00	5.01	-1.99	-.0714	-.0055	.0215	-.0343	-.0929	.0288	-.0114	.0039
1.201	-.04	5.03	-.00	.0162	-.0086	.0166	-.0355	-.0004	.0268	-.0148	-.0015
1.202	-.02	5.04	2.01	.1030	-.0053	.0099	-.0356	.0931	.0303	-.0172	-.0069
1.204	.02	5.01	4.01	.1846	.0041	-.0022	-.0348	.1868	.0389	-.0148	-.0134
1.201	.04	5.02	8.03	.3670	.0426	.0028	-.0350	.3643	.0776	-.0368	-.0284
1.202	.00	5.04	16.65	.7255	.2044	.0214	-.0418	.7041	.2463	-.0970	-.0622
1.199	-.01	7.00	-1.99	-.0791	-.0345	.0110	-.0642	-.0902	.0296	-.0024	.0028
1.201	-.01	7.01	-.01	.0112	-.0376	.0062	-.0643	.0050	.0267	-.0070	-.0024
1.201	-.01	7.01	2.00	.1009	-.0340	.0034	-.0639	.0975	.0299	-.0126	-.0077
1.202	.00	7.03	4.03	.1882	-.0250	-.0052	-.0638	.1935	.0388	-.0139	-.0141
1.199	.02	7.01	8.03	.3706	.0137	-.0057	-.0632	.3763	.0768	-.0338	-.0294
1.200	.02	7.07	16.62	.7337	.1755	.0072	-.0685	.7265	.2440	-.0926	-.0639
1.201	.00	9.00	.02	.0043	-.0668	-.0068	-.0938	.0110	.0270	.0030	-.0036
1.200	.00	9.01	4.02	.1865	-.0546	-.0161	-.0925	.2026	.0379	-.0072	-.0151
1.200	.01	9.04	8.02	.3720	-.0163	-.0170	-.0915	.3890	.0753	-.0284	-.0306
1.200	.01	8.97	16.60	.7392	.1481	-.0066	-.0931	.7459	.2412	-.0878	-.0651
1.199	-.05	.78	-2.00	-.0742	.0554	.0129	.0256	-.0871	.0299	-.0044	.0052
1.199	10.01	.78	-2.00	-.0733	.0554	.0149	.0260	-.0882	.0294	-.0070	.0053
1.202	10.00	.79	.00	.0102	.0521	.0101	.0249	.0000	.0272	-.0079	-.0001
1.197	10.00	.81	2.02	.0956	.0542	.0075	.0239	.0881	.0303	-.0120	-.0058
1.204	9.99	.78	4.03	.1819	.0632	.0102	.0239	.1717	.0393	-.0205	-.0119
1.198	9.99	.75	6.00	.2708	.0789	.0126	.0239	.2582	.0550	-.0289	-.0181
1.201	9.98	.74	8.03	.3577	.1008	.0175	.0230	.3402	.0778	-.0414	-.0261
1.203	9.98	.68	16.69	.7051	.2619	.0467	.0143	.6583	.2476	-.1025	-.0589
1.203	9.96	5.02	-1.99	-.0661	-.0046	.0273	-.0324	-.0934	.0278	-.0180	.0039
1.201	9.96	5.00	.02	.0213	-.0067	.0232	-.0330	-.0019	.0262	-.0215	-.0014
1.200	9.97	5.02	2.06	.1129	-.0032	.0206	-.0338	.0923	.0307	-.0273	-.0070
1.199	9.97	5.02	4.01	.2012	.0068	.0183	-.0342	.1829	.0410	-.0332	-.0129
1.199	9.98	5.03	8.04	.3839	.0471	.0245	-.0359	.3593	.0830	-.0568	-.0277
1.202	9.91	5.05	16.75	.7436	.2128	.0400	-.0457	.7036	.2586	-.1177	-.0629
1.203	9.98	7.03	-2.00	-.0711	-.0341	.0223	-.0624	-.0934	.0283	-.0129	.0032
1.200	9.98	7.00	.02	.0196	-.0365	.0189	-.0627	.0008	.0262	-.0185	-.0022
1.201	9.99	7.02	2.01	.1103	-.0327	.0168	-.0629	.0935	.0303	-.0256	-.0076
1.201	9.99	7.01	4.02	.2054	-.0217	.0167	-.0628	.1887	.0411	-.0342	-.0135
1.200	9.99	7.02	8.04	.3890	.0185	.0193	-.0642	.3697	.0827	-.0566	-.0285
1.199	9.99	7.03	16.76	.7568	.1867	.0305	-.0731	.7263	.2598	-.1171	-.0641
1.201	-4.86	.79	-1.98	-.0752	.0552	.0103	.0249	-.0855	.0303	-.0023	.0051
1.204	-4.88	.82	.02	.0029	.0518	-.0039	.0239	.0067	.0279	.0047	-.0011
1.197	-4.65	.81	2.00	.0819	.0529	-.0121	.0239	.0941	.0290	.0066	-.0067
1.200	-5.13	.80	4.00	.1692	.0616	-.0091	.0246	.1783	.0370	-.0017	-.0127
1.200	-5.11	.78	6.01	.2565	.0768	-.0073	.0252	.2638	.0516	-.0094	-.0190
1.201	-5.34	.76	8.03	.3426	.0982	-.0033	.0254	.3459	.0728	-.0202	-.0266
1.203	-4.58	.72	16.60	.6885	.2554	.0312	.0189	.6573	.2366	-.0813	-.0568
1.200	-5.09	7.04	-1.99	-.0860	-.0342	-.0006	-.0644	-.0854	.0302	.0070	.0024
1.201	-5.08	7.03	.00	.0041	-.0372	-.0046	-.0640	.0087	.0268	.0017	-.0029
1.200	-5.07	7.03	2.01	.0947	-.0338	-.0086	-.0634	.1033	.0296	-.0025	-.0083
1.202	-5.06	7.05	4.02	.1809	-.0253	-.0167	-.0632	.1976	.0379	-.0048	-.0149
1.200	-5.06	7.02	8.05	.3633	.0138	-.0175	-.0608	.3808	.0746	-.0241	-.0305
1.198	-5.06	7.01	16.57	.7236	.1746	-.0026	-.0629	.7262	.2375	-.0809	-.0637

TABLE B9.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.902	-5.06	1.05	-2.01	-.1077	.0178	-.0035	-.0004	-.1042	.0183	-.0064	-.0125
.898	-5.07	1.05	-.02	-.0013	.0153	-.0093	.0006	.0080	.0147	.0053	-.0029
.904	-5.08	1.04	1.99	.1034	.0196	-.0143	.0018	.1177	.0178	.0172	.0053
.900	-5.08	1.03	3.98	.2129	.0291	-.0156	.0030	.2286	.0261	.0241	.0113
.903	-5.08	1.03	5.99	.3132	.0501	-.0100	.0058	.3231	.0444	.0212	.0134
.901	-5.07	1.04	7.99	.3925	.0765	-.0084	.0062	.4009	.0703	.0079	.0018
.900	-5.44	.87	15.97	.5227	.2104	.0078	.0284	.5148	.1821	-.0248	-.0207
.899	-5.07	3.51	-2.02	-.1046	-.0453	-.0013	-.0629	-.1033	.0176	-.0082	-.0148
.897	-5.06	3.52	.00	.0067	-.0483	-.0070	-.0628	.0137	.0145	.0007	-.0049
.899	-5.06	3.51	1.99	.1164	-.0448	-.0111	-.0621	.1276	.0173	.0099	.0042
.897	-5.05	3.51	3.98	.2309	-.0347	-.0165	-.0622	.2474	.0274	.0153	.0084
.898	-5.05	3.51	7.94	.4049	.0129	-.0172	-.0571	.4221	.0700	.0035	.0002
.898	-5.05	3.51	15.95	.5534	.1480	-.0173	-.0353	.5707	.1833	-.0242	-.0238
.901	9.97	1.02	-2.03	-.0832	.0186	.0241	.0028	-.1073	.0158	-.0340	-.0166
.898	9.96	1.02	-.02	.0254	.0168	.0218	.0023	.0036	.0145	-.0242	-.0078
.900	9.97	1.02	2.01	.1344	.0209	.0171	.0018	.1173	.0191	-.0141	.0015
.898	9.96	1.01	4.00	.2474	.0321	.0152	.0014	.2323	.0306	-.0088	.0062
.900	9.96	1.02	5.99	.3501	.0514	.0106	.0007	.3396	.0507	-.0086	.0035
.898	9.96	1.01	7.99	.4265	.0790	.0113	.0029	.4152	.0761	-.0129	.0003
.900	9.78	.87	16.05	.5620	.2195	.0284	.0210	.5335	.1985	-.0484	-.0216
.898	10.06	3.49	-2.02	-.0736	-.0461	.0405	-.0592	-.1141	.0131	-.0489	-.0183
.900	10.01	3.51	.00	.0403	-.0473	.0360	-.0605	.0043	.0132	-.0395	-.0092
.901	9.99	3.51	1.98	.1482	-.0426	.0294	-.0614	.1188	.0189	-.0309	.0000
.900	10.00	3.51	4.01	.2628	-.0312	.0222	-.0627	.2406	.0315	-.0240	.0053
.900	10.03	3.51	7.99	.4593	.0191	.0176	-.0617	.4417	.0808	-.0335	-.0018
.900	9.98	3.51	16.18	.6231	.1680	.0273	-.0483	.5959	.2164	-.0731	-.0251
.899	9.97	5.00	-2.02	-.0678	-.0837	.0505	-.0957	-.1183	.0121	-.0578	-.0184
.901	9.97	5.00	-.03	.0434	-.0842	.0437	-.0968	-.0003	.0126	-.0482	-.0097
.899	9.99	5.00	2.01	.1566	-.0795	.0359	-.0981	.1208	.0187	-.0389	.0003
.900	9.98	5.01	4.03	.2727	-.0674	.0269	-.0992	.2458	.0318	-.0326	.0054
.900	9.96	5.00	8.00	.4705	-.0167	.0187	-.0985	.4518	.0817	-.0419	-.0019
.899	9.98	5.01	16.15	.6298	.1297	.0143	-.0840	.6155	.2137	-.0725	-.0253
.900	19.94	.94	-2.01	-.0684	.0219	.0402	.0089	-.1086	.0130	-.0515	-.0188
.900	19.94	.94	-.02	.0402	.0210	.0388	.0077	.0014	.0133	-.0419	-.0100
.900	19.93	.94	2.01	.1503	.0262	.0370	.0068	.1133	.0194	-.0333	-.0010
.900	19.93	.93	4.01	.2603	.0378	.0331	.0057	.2272	.0321	-.0274	.0041
.899	19.93	.95	6.00	.3682	.0571	.0280	.0038	.3402	.0533	-.0269	.0015
.901	19.93	.97	7.97	.4517	.0841	.0263	.0033	.4254	.0808	-.0304	-.0028
.901	19.94	.85	16.15	.5933	.2304	.0446	.0177	.5487	.2127	-.0673	-.0240
.899	19.68	3.50	-1.98	-.0535	-.0420	.0601	-.0526	-.1136	.0107	-.0701	-.0197
.902	19.68	3.51	-.01	.0543	-.0421	.0554	-.0547	-.0011	.0125	-.0607	-.0114
.902	19.69	3.52	2.00	.1654	-.0364	.0513	-.0563	.1141	.0198	-.0522	-.0022
.902	19.69	3.51	4.01	.2788	-.0239	.0439	-.0578	.2348	.0339	-.0467	.0029
.900	19.68	3.51	8.01	.4843	.0269	.0375	-.0593	.4668	.0862	-.0551	-.0037
.899	19.69	3.50	16.24	.6496	.1801	.0450	-.0493	.6046	.2294	-.0922	-.0269
.899	19.67	5.02	-2.01	-.0626	-.0820	.0532	-.0932	-.1158	.0112	-.0607	-.0192
.901	19.68	5.01	.01	.0502	-.0815	.0476	-.0939	.0026	.0124	-.0518	-.0103
.900	19.69	5.01	2.00	.1628	-.0760	.0413	-.0950	.1214	.0190	-.0444	-.0010
.901	19.69	5.01	3.99	.2757	-.0640	.0337	-.0961	.2420	.0322	-.0387	.0045
.899	19.68	5.03	7.99	.4793	-.0132	.0263	-.0968	.4530	.0836	-.0495	-.0028
.898	19.68	5.02	16.24	.6598	.1439	.0325	-.0842	.6274	.2282	-.0909	-.0268
.601	19.69	.94	-2.04	-.0197	.0199	.0431	.0143	-.0628	.0055	-.0487	-.0144
.601	19.69	.94	-.01	.0689	.0215	.0435	.0132	.0254	.0084	-.0434	-.0084
.603	19.70	.94	2.04	.1591	.0265	.0431	.0126	.1160	.0139	-.0389	-.0019
.599	19.69	.94	4.00	.2437	.0342	.0424	.0121	.2013	.0221	-.0343	.0047
.600	19.71	.94	5.98	.3314	.0468	.0416	.0105	.2898	.0363	-.0271	.0121
.601	19.69	.97	7.99	.4124	.0681	.0351	.0077	.3773	.0604	-.0223	.0114
.601	19.71	.97	11.95	.5623	.1381	.0362	.0064	.5260	.1316	-.0465	-.0110
.602	19.69	.96	15.74	.6641	.2173	.0461	.0062	.6179	.2111	-.0666	-.0220
.598	19.70	3.51	-1.99	.0271	-.1206	.0896	-.1224	-.0625	.0018	-.0976	-.0177
.600	19.67	3.51	-.02	.1162	-.1165	.0842	-.1248	.0320	.0083	-.0915	-.0118
.601	19.70	3.50	2.02	.2100	-.1090	.0801	-.1261	.1299	.0171	-.0877	-.0056
.602	19.69	3.51	4.00	.3016	-.0991	.0735	-.1279	.2280	.0288	-.0829	.0013
.600	19.70	3.49	7.95	.4872	-.0579	.0623	-.1315	.4248	.0736	-.0779	.0093
.599	19.70	3.50	12.02	.6603	.0214	.0551	-.1353	.6052	.1567	-.1054	-.0148
.598	19.71	3.52	15.85	.7823	.1086	.0547	-.1391	.7276	.2477	-.1268	-.0271

TABLE B9.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.602	19.67	5.01	-.04	.1045	-.2022	.0737	-.2101	.0309	.0079	-.0815	-.0115
.600	19.65	5.00	4.00	.2960	-.1878	.0572	-.2144	.2389	.0266	-.0744	.0013
.602	19.64	5.00	8.00	.4897	-.1438	.0395	-.2148	.4502	.0710	-.0694	.0090
.600	19.64	5.00	15.83	.7942	.0246	.0240	-.2171	.7702	.2417	-.1205	-.0273
.600	9.98	.98	-2.02	-.0390	.0153	.0264	.0072	-.0654	.0082	-.0296	-.0117
.600	9.98	.98	.00	.0478	.0162	.0251	.0066	.0227	.0096	-.0238	-.0056
.602	9.98	.99	1.94	.1284	.0194	.0216	.0065	.1068	.0129	-.0184	.0006
.600	9.98	.98	2.01	.1318	.0195	.0216	.0066	.1102	.0130	-.0181	.0009
.601	9.98	.99	3.96	.2196	.0259	.0222	.0063	.1974	.0196	-.0124	.0078
.601	9.98	.99	6.03	.3106	.0388	.0219	.0057	.2887	.0331	-.0048	.0153
.601	9.97	.99	7.98	.3897	.0607	.0171	.0049	.3726	.0558	-.0031	.0137
.599	9.98	.99	12.03	.5422	.1316	.0199	.0056	.5223	.1260	-.0282	-.0085
.598	9.96	.98	15.70	.6377	.2064	.0298	.0070	.6079	.1993	-.0476	-.0193
.602	9.97	3.51	-1.99	-.0180	-.1297	.0520	-.1351	-.0700	.0054	-.0542	-.0149
.599	9.97	3.51	-.02	.0737	-.1289	.0465	-.1375	.0272	.0086	-.0506	-.0093
.602	9.97	3.51	1.97	.1658	-.1230	.0399	-.1373	.1259	.0142	-.0464	-.0030
.602	9.97	3.51	4.00	.2598	-.1146	.0338	-.1375	.2260	.0229	-.0409	.0041
.602	9.97	3.52	8.02	.4492	-.0751	.0223	-.1393	.4269	.0642	-.0371	.0097
.600	10.02	3.51	11.99	.6117	-.0013	.0163	-.1396	.5954	.1383	-.0644	-.0125
.598	9.86	3.51	15.80	.7367	.0842	.0178	-.1401	.7189	.2244	-.0874	-.0246
.601	9.99	5.01	.00	.1000	-.2089	.0712	-.2169	.0288	.0081	-.0792	-.0109
.600	9.98	5.00	3.98	.2925	-.1941	.0524	-.2199	.2401	.0258	-.0698	.0025
.599	9.97	4.99	8.00	.4854	-.1523	.0335	-.2219	.4519	.0695	-.0648	.0093
.602	9.91	5.02	15.76	.7799	.0124	.0139	-.2215	.7661	.2338	-.1107	-.0259
.602	-5.06	1.01	-2.03	-.0662	.0137	.0057	.0022	-.0719	.0115	-.0103	-.0102
.601	-5.07	1.01	-.05	.0191	.0136	.0025	.0025	.0166	.0111	-.0048	-.0040
.602	-5.07	1.01	2.02	.1052	.0158	.0006	.0029	.1045	.0129	.0029	.0028
.604	-5.08	1.01	4.00	.1916	.0211	.0004	.0037	.1912	.0175	.0101	.0099
.601	-5.08	1.01	5.99	.2787	.0328	.0005	.0043	.2782	.0286	.0168	.0169
.600	-5.07	1.01	8.00	.3634	.0562	-.0021	.0052	.3655	.0510	.0161	.0145
.601	-4.59	1.00	12.00	.5119	.1244	.0019	.0073	.5100	.1170	-.0097	-.0071
.599	-4.96	.99	15.69	.6055	.1973	.0114	.0106	.5941	.1867	-.0285	-.0180
.599	-5.05	3.53	-2.03	-.0938	-.1285	-.0129	-.1404	-.0808	.0119	.0063	-.0114
.599	-5.05	3.52	-.04	.0007	-.1290	-.0177	-.1389	.0184	.0099	.0105	-.0055
.599	-5.04	3.52	2.03	.0959	-.1277	-.0228	-.1385	.1186	.0108	.0158	.0011
.601	-5.03	3.52	4.01	.1870	-.1220	-.0276	-.1363	.2147	.0143	.0217	.0079
.601	-5.03	3.53	8.01	.3787	-.0852	-.0371	-.1331	.4157	.0479	.0233	.0115
.604	-5.04	3.53	12.00	.5370	-.0148	-.0410	-.1273	.5780	.1125	-.0042	-.0106
.598	-5.04	3.52	15.63	.6447	.0572	-.0393	-.1244	.6840	.1816	-.0233	-.0214
.399	19.72	.97	-2.05	.0004	.0200	.0444	.0142	-.0440	.0059	-.0447	-.0123
.400	19.71	.97	-.02	.0844	.0220	.0441	.0132	.0403	.0088	-.0411	-.0078
.401	19.71	.97	2.01	.1680	.0270	.0418	.0137	.1262	.0133	-.0396	-.0030
.400	19.71	.97	4.03	.2574	.0345	.0436	.0135	.2138	.0210	-.0369	.0022
.402	19.71	.97	5.99	.3422	.0455	.0441	.0125	.2980	.0331	-.0315	.0085
.401	19.72	.98	8.03	.4222	.0653	.0394	.0096	.3828	.0557	-.0227	.0138
.400	19.70	.98	11.96	.5814	.1380	.0384	.0082	.5430	.1298	-.0422	-.0054
.401	19.70	.98	15.44	.6940	.2163	.0478	.0080	.6462	.2084	-.0626	-.0174
.400	19.47	3.51	-2.02	.1212	-.2875	.1580	-.2809	-.0368	-.0066	-.1677	-.0211
.401	19.47	3.52	-.00	.2173	-.2792	.1479	-.2848	.0694	.0056	-.1643	-.0169
.402	19.46	3.52	2.00	.3125	-.2684	.1384	-.2878	.1741	.0193	-.1612	-.0121
.401	19.46	3.52	4.01	.4158	-.2574	.1288	-.2937	.2869	.0364	-.1584	-.0066
.402	19.47	3.52	7.98	.6034	-.2109	.1041	-.2982	.4993	.0872	-.1508	.0044
.400	19.47	3.52	11.98	.8028	-.1231	.0849	-.3067	.7179	.1835	-.1745	-.0136
.400	19.47	3.52	15.53	.9455	-.0271	.0737	-.3110	.8718	.2839	-.1973	-.0279

TABLE B10.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH UPRIGHT SERN, A/B POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.599	-5.08	.99	-2.02	-.0996	.0189	-.0109	.0036	-.0887	.0153	.0102	-.0033
.598	-5.08	.99	-.01	-.0147	.0175	-.0126	.0043	-.0021	.0132	.0155	.0026
.598	-5.07	.99	2.01	.0738	.0187	-.0129	.0052	.0867	.0135	.0221	.0090
.604	-5.07	.99	4.00	.1614	.0229	-.0131	.0060	.1744	.0169	.0291	.0158
.600	-5.07	.99	6.01	.2502	.0339	-.0124	.0066	.2626	.0273	.0354	.0228
.598	-5.09	.99	7.98	.3382	.0570	-.0112	.0076	.3493	.0494	.0318	.0205
.599	-5.06	.98	11.99	.4891	.1223	-.0067	.0096	.4958	.1127	.0005	-.0063
.601	-4.81	.97	15.61	.5756	.1910	.0002	.0134	.5753	.1776	-.0165	-.0177
.603	-5.06	3.51	-2.01	-.1258	-.2142	-.0266	-.2287	-.0992	.0145	.0251	-.0093
.602	-5.06	3.52	-.04	-.0307	-.2183	-.0351	-.2292	.0043	.0109	.0302	-.0033
.601	-5.07	3.52	2.02	.0696	-.2182	-.0434	-.2281	.1130	.0098	.0354	.0033
.593	-5.07	3.49	4.03	.1717	-.2185	-.0525	-.2308	.2243	.0124	.0416	.0102
.599	-5.06	3.51	8.02	.3676	-.1786	-.0628	-.2226	.4304	.0439	.0378	.0135
.598	-5.05	3.51	12.01	.5411	-.1087	-.0717	-.2169	.6127	.1082	.0061	-.0123
.608	-4.97	3.54	15.53	.6449	-.0326	-.0744	-.2055	.7193	.1729	-.0123	-.0238
.900	-4.84	1.02	-2.00	-.1169	.0192	-.0032	.0008	-.1138	.0183	-.0011	-.0092
.900	-4.60	1.01	-.01	-.0096	.0164	-.0072	.0016	-.0024	.0148	.0082	-.0000
.898	-4.82	1.01	1.99	.0989	.0190	-.0088	.0024	.1077	.0166	.0181	.0090
.899	-4.97	1.01	4.00	.2114	.0286	-.0116	.0026	.2229	.0260	.0238	.0126
.901	-4.58	1.02	6.00	.3170	.0473	-.0139	.0028	.3309	.0445	.0199	.0075
.899	-4.81	1.02	7.99	.3820	.0743	-.0026	.0051	.3847	.0692	.0053	.0032
.895	-4.93	.97	12.00	.4720	.1392	.0016	.0155	.4704	.1238	-.0090	-.0085
.899	-4.91	.88	15.98	.5314	.2100	.0077	.0258	.5236	.1842	-.0234	-.0211
.899	-5.03	3.52	-2.02	-.1307	-.0863	-.0162	-.1041	-.1146	.0178	.0124	-.0110
.898	-5.03	3.53	-.02	-.0188	-.0905	-.0241	-.1039	.0053	.0134	.0228	-.0010
.901	-5.04	3.51	1.98	.0930	-.0866	-.0301	-.1018	.1230	.0152	.0312	.0071
.900	-5.04	3.52	4.02	.2139	-.0768	-.0366	-.1013	.2505	.0245	.0349	.0100
.899	-5.01	3.50	8.02	.3755	-.0283	-.0299	-.0943	.4055	.0659	.0123	.0002
.897	-5.19	3.50	12.03	.4754	.0340	-.0352	-.0836	.5107	.1176	.0005	-.0106
.902	-4.77	3.52	15.90	.5475	.1023	-.0410	-.0721	.5885	.1743	-.0108	-.0251
1.198	-4.80	.80	-2.02	-.0928	.0531	-.0006	.0234	-.0922	.0297	.0093	.0074
1.200	-4.80	.81	-.03	-.0038	.0494	.0016	.0232	-.0055	.0262	.0026	.0027
1.200	-4.73	.81	2.02	.0877	.0523	.0042	.0232	.0835	.0290	-.0047	-.0025
1.202	-5.52	.81	3.99	.1752	.0610	.0066	.0227	.1686	.0382	-.0115	-.0081
1.199	-4.80	.81	5.98	.2639	.0763	.0101	.0223	.2538	.0540	-.0211	-.0149
1.199	-4.55	.80	8.01	.3504	.0983	.0135	.0221	.3369	.0762	-.0318	-.0231
1.198	-4.79	.73	12.04	.5136	.1607	.0205	.0223	.4930	.1384	-.0545	-.0409
1.200	-4.98	.66	16.57	.6822	.2555	.0309	.0202	.6513	.2353	-.0791	-.0567
1.199	-5.05	7.03	-2.01	-.0930	-.0943	.0009	-.1235	-.0938	.0292	.0135	.0040
1.199	-5.04	7.04	-.02	.0018	-.0975	-.0025	-.1238	.0043	.0264	.0077	-.0006
1.201	-5.06	7.04	2.01	.0977	-.0942	-.0054	-.1234	.1031	.0292	.0006	-.0059
1.199	-5.09	7.03	4.01	.1929	-.0842	-.0074	-.1232	.2003	.0389	-.0077	-.0114
1.200	-5.09	7.02	8.03	.3831	-.0442	-.0075	-.1232	.3906	.0789	-.0324	-.0266
1.199	-5.03	7.02	12.03	.5655	.0206	-.0018	-.1249	.5673	.1455	-.0652	-.0447
1.197	-5.23	7.00	16.59	.7577	.1219	.0009	-.1282	.7569	.2501	-.0963	-.0613
1.200	-.07	.80	-2.01	-.0905	.0546	.0027	.0237	-.0932	.0309	.0064	.0082
1.201	-.07	.81	.01	.0000	.0509	.0049	.0236	-.0049	.0273	-.0002	.0033
1.201	-.08	.81	2.01	.0887	.0537	.0071	.0235	.0816	.0302	-.0070	-.0017
1.200	-.07	.81	3.99	.1759	.0625	.0098	.0232	.1660	.0393	-.0141	-.0074
1.200	.18	.81	6.01	.2643	.0777	.0114	.0227	.2528	.0550	-.0219	-.0143
1.200	.21	.79	7.97	.3467	.0987	.0128	.0225	.3339	.0762	-.0309	-.0226
1.200	.22	.71	12.00	.5107	.1608	.0198	.0231	.4909	.1377	-.0535	-.0402
1.196	-.04	.62	16.58	.6813	.2571	.0283	.0223	.6530	.2348	-.0752	-.0558
1.198	-.02	5.00	-2.00	-.0971	-.0448	-.0058	-.0756	-.0913	.0308	.0171	.0057
1.200	-.03	5.02	.00	-.0046	-.0488	-.0079	-.0759	.0033	.0271	.0112	.0006
1.199	-.03	5.03	2.02	.0891	-.0464	-.0092	-.0761	.0983	.0297	.0043	-.0046
1.201	-.04	5.04	4.00	.1808	-.0372	-.0094	-.0756	.1902	.0385	-.0042	-.0104
1.200	-.05	5.03	8.03	.3681	.0020	-.0050	-.0751	.3731	.0770	-.0289	-.0256
1.198	-.08	5.02	12.02	.5446	.0650	.0017	-.0766	.5428	.1416	-.0590	-.0433
1.195	-.27	5.00	16.64	.7351	.1660	.0091	-.0803	.7260	.2463	-.0908	-.0600
1.198	-.03	7.01	-2.03	-.0845	-.0925	.0147	-.1214	-.0992	.0289	.0028	.0056
1.196	-.04	7.00	.02	.0118	-.0959	.0095	-.1223	.0023	.0264	-.0030	.0005
1.201	-.03	7.03	1.99	.1050	-.0922	.0065	-.1223	.0985	.0302	-.0102	-.0048
1.202	-.05	7.03	4.01	.2004	-.0821	.0036	-.1224	.1968	.0403	-.0181	-.0107
1.201	-.06	7.04	8.04	.3895	-.0426	.0024	-.1235	.3871	.0809	-.0424	-.0262
1.197	-.05	7.02	12.02	.5706	.0216	.0062	-.1263	.5644	.1479	-.0726	-.0438

TABLE B10.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.897	20.02	1.02	-2.01	-.1088	.0189	.0084	.0023	-.1172	.0165	-.0136	-.0095
.902	20.03	1.02	-.01	.0003	.0171	.0051	.0022	-.0048	.0149	-.0033	.0000
.900	20.04	1.02	2.04	.1102	.0205	.0019	.0023	.1083	.0182	.0065	.0088
.898	20.04	1.02	3.99	.2205	.0303	-.0007	.0022	.2212	.0281	.0128	.0132
.901	20.04	1.02	5.98	.3252	.0489	-.0055	.0014	.3307	.0476	.0114	.0079
.902	20.74	1.01	7.98	.3890	.0760	-.0017	.0043	.3901	.0717	.0046	.0042
.900	19.90	.94	12.00	.4817	.1422	.0017	.0164	.4800	.1258	-.0071	-.0065
.898	20.19	.85	15.96	.5152	.2076	.0078	.0271	.5074	.1804	-.0223	-.0203
.899	20.01	3.56	-1.98	-.0602	-.0792	.0702	-.0891	-.1304	.0100	-.0687	-.0141
.899	20.00	3.50	.01	.0495	-.0771	.0639	-.0891	-.0144	.0120	-.0596	-.0057
.898	20.00	3.49	2.03	.1640	-.0717	.0574	-.0912	.1066	.0196	-.0503	.0043
.901	19.99	3.51	4.00	.2778	-.0591	.0485	-.0929	.2293	.0338	-.0449	.0089
.901	19.84	3.51	8.01	.4706	-.0105	.0363	-.0960	.4343	.0855	-.0525	-.0006
.902	20.00	3.51	12.03	.5722	.0609	.0374	-.0914	.5348	.1523	-.0730	-.0148
.899	19.98	3.51	16.26	.6636	.1444	.0375	-.0886	.6261	.2330	-.0925	-.0276
.901	19.99	5.00	-1.98	-.0342	-.1300	.0956	-.1335	-.1298	.0035	-.0993	-.0233
.899	20.10	5.00	-.01	.0769	-.1292	.0879	-.1365	-.0089	.0072	-.0913	-.0154
.900	19.99	5.01	2.04	.1938	-.1228	.0789	-.1397	.1149	.0169	-.0813	-.0057
.902	19.99	5.02	4.05	.3107	-.1090	.0679	-.1420	.2428	.0330	-.0753	.0001
.899	19.99	5.01	8.00	.5133	-.0589	.0521	-.1484	.4612	.0895	-.0816	-.0073
.899	20.00	5.01	12.07	.6361	.0163	.0457	-.1482	.5904	.1645	-.1013	-.0236
.901	19.99	5.01	16.35	.7262	.1054	.0400	-.1441	.6863	.2495	-.1207	-.0374
.601	19.93	1.00	-1.99	-.0811	.0153	.0085	.0054	-.0896	.0099	-.0110	-.0072
.605	19.85	1.00	-.04	.0029	.0147	.0045	.0056	-.0016	.0091	-.0047	-.0006
.601	19.81	1.00	-.04	.0021	.0147	.0044	.0057	-.0023	.0090	-.0047	-.0004
.602	19.81	1.00	2.01	.0899	.0166	.0025	.0060	.0874	.0106	.0025	.0061
.598	19.91	1.00	3.98	.1753	.0215	.0030	.0063	.1724	.0157	.0083	.0126
.601	20.01	1.00	6.03	.2679	.0329	.0018	.0063	.2661	.0265	.0172	.0202
.601	20.27	.99	7.98	.3493	.0549	-.0001	.0069	.3494	.0480	.0176	.0189
.599	19.97	.99	12.01	.4980	.1222	.0032	.0084	.4948	.1139	-.0099	-.0054
.605	20.14	.98	15.67	.5980	.1963	.0128	.0108	.5852	.1855	-.0313	-.0187
.601	20.06	.98	15.67	.5974	.1961	.0129	.0108	.5845	.1853	-.0314	-.0187
.602	20.06	3.51	-1.97	.0337	-.1970	.1120	-.1970	-.0784	.0001	-.1053	-.0164
.599	20.08	3.50	.01	.1246	-.1951	.1020	-.2030	.0226	.0080	-.0982	-.0106
.599	20.01	3.50	2.01	.2215	-.1882	.0936	-.2059	.1279	.0177	-.0934	-.0042
.597	20.01	3.51	4.01	.3202	-.1803	.0852	-.2107	.2351	.0304	-.0900	.0024
.599	20.00	3.52	8.03	.5105	-.1373	.0627	-.2148	.4479	.0775	-.0808	.0110
.598	20.00	3.52	12.00	.6864	-.0588	.0473	-.2193	.6391	.1605	-.1069	-.0139
.599	19.81	3.52	15.83	.8171	.0336	.0411	-.2214	.7760	.2550	-.1317	-.0309
.600	20.01	5.00	.05	.1860	-.3152	.1414	-.3207	.0446	.0055	-.1443	-.0219
.601	19.99	5.03	4.04	.3881	-.2944	.1127	-.3287	.2754	.0344	-.1367	-.0117
.600	19.97	5.02	8.06	.5887	-.2484	.0819	-.3359	.5068	.0875	-.1281	-.0022
.600	19.93	5.01	15.91	.9248	-.0595	.0377	-.3383	.8871	.2789	-.1817	-.0497
.599	.17	.99	-2.01	-.0950	.0154	-.0044	.0035	-.0905	.0119	.0025	-.0059
.602	.18	.99	-.04	-.0103	.0145	-.0069	.0041	-.0034	.0104	.0083	.0003
.602	.19	.99	2.03	.0782	.0159	-.0079	.0048	.0861	.0111	.0152	.0069
.601	.18	.99	3.98	.1632	.0202	-.0084	.0055	.1715	.0147	.0223	.0137
.601	-.04	.99	5.99	.2543	.0312	-.0083	.0062	.2626	.0250	.0296	.0210
.600	-.64	.99	8.00	.3403	.0540	-.0083	.0075	.3487	.0465	.0283	.0198
.599	.31	.98	12.03	.4929	.1222	-.0035	.0099	.4963	.1123	-.0007	-.0046
.599	.39	.97	15.64	.5826	.1918	.0037	.0131	.5788	.1787	-.0182	-.0163
.602	-.06	2.01	-1.98	-.0984	-.0854	-.0074	-.0971	-.0909	.0117	.0041	-.0080
.601	.19	2.02	-.03	-.0106	-.0870	-.0118	-.0971	.0012	.0100	.0093	-.0021
.600	.18	2.01	2.02	.0833	-.0855	-.0154	-.0962	.0987	.0107	.0146	.0044
.600	.18	2.02	4.00	.1766	-.0812	-.0181	-.0958	.1947	.0145	.0200	.0113
.601	.17	2.02	7.98	.3603	-.0468	-.0239	-.0930	.3842	.0462	.0244	.0182
.598	-.38	2.01	12.01	.5245	.0237	-.0242	-.0902	.5486	.1139	-.0079	-.0080
.604	.37	2.02	15.67	.6322	.0995	-.0178	-.0859	.6500	.1854	-.0306	-.0209
.600	-.08	3.51	-2.00	-.0956	-.2170	.0000	-.2271	-.0956	.0100	.0027	-.0098
.601	-.09	3.51	-.01	-.0001	-.2179	-.0083	-.2265	.0081	.0086	.0078	-.0038
.601	-.11	3.51	2.01	.0980	-.2162	-.0164	-.2257	.1144	.0095	.0129	.0025
.601	-.23	3.51	3.98	.1957	-.2109	-.0243	-.2246	.2200	.0137	.0184	.0094
.600	-.29	3.51	8.02	.3966	-.1733	-.0370	-.2221	.4336	.0488	.0180	.0143
.597	-.07	3.50	12.00	.5728	-.1016	-.0457	-.2198	.6185	.1182	-.0145	-.0108
.604	.07	3.52	15.63	.6867	-.0219	-.0496	-.2131	.7363	.1911	-.0378	-.0244
.599	-.09	4.99	-.02	-.0256	-.3555	-.0387	-.3650	.0132	.0096	.0380	-.0053
.602	-.09	5.00	4.01	.1802	-.3486	-.0645	-.3589	.2447	.0104	.0482	.0079
.602	-.42	5.00	8.02	.3894	-.3094	-.0879	-.3516	.4773	.0421	.0468	.0106

TABLE B10.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.897	.11	4.99	15.49	.6977	-.1663	-.1154	-.3406	.8131	.1742	-.0076	-.0269
.897	-.11	1.02	-1.99	-.1127	.0186	.0005	.0010	-.1132	.0176	-.0048	-.0093
.897	.19	1.02	-.01	-.0058	.0161	-.0021	.0017	-.0037	.0143	.0038	-.0000
.901	.36	1.02	2.04	.1050	.0194	-.0048	.0019	.1098	.0174	.0140	.0087
.898	.36	1.02	3.98	.2145	.0289	-.0075	.0022	.2220	.0266	.0204	.0130
.899	.37	1.02	6.00	.3240	.0478	-.0108	.0023	.3347	.0455	.0179	.0082
.897	.26	1.02	8.01	.3897	.0754	-.0014	.0048	.3911	.0706	.0049	.0035
.901	.12	.95	12.01	.4710	.1408	.0028	.0169	.4682	.1239	-.0084	-.0076
.897	-.13	.88	16.00	.5211	.2071	.0076	.0258	.5134	.1813	-.0223	-.0204
.898	-.08	2.00	-2.02	-.1199	-.0270	-.0042	-.0442	-.1157	.0171	.0000	-.0104
.900	-.07	2.00	-.03	-.0107	-.0298	-.0105	-.0437	-.0003	.0139	.0104	-.0004
.900	-.09	2.01	2.01	.1004	-.0273	-.0140	-.0434	.1144	.0161	.0199	.0085
.899	-.08	2.00	4.00	.2167	-.0174	-.0178	-.0432	.2345	.0258	.0245	.0123
.897	-.82	2.00	8.03	.3815	.0305	-.0121	-.0377	.3936	.0682	.0067	.0030
.900	-.19	2.01	11.99	.4890	.0955	-.0085	-.0288	.4975	.1243	-.0098	-.0076
.898	-.44	2.00	16.03	.5410	.1634	-.0046	-.0204	.5456	.1838	-.0269	-.0215
.900	-.11	3.51	-1.85	-.1021	-.0867	.0039	-.1023	-.1060	.0156	-.0036	-.0106
.899	-.03	3.50	-.02	-.0024	-.0888	-.0040	-.1020	.0015	.0132	.0053	-.0016
.902	-.11	3.52	2.03	.1113	-.0854	-.0103	-.1015	.1217	.0162	.0141	.0069
.900	-.10	3.52	3.99	.2275	-.0757	-.0171	-.1016	.2446	.0259	.0189	.0107
.896	-.11	3.50	8.03	.4016	-.0272	-.0148	-.0967	.4165	.0695	.0005	.0013
.898	-.02	3.50	8.03	.4022	-.0268	-.0147	-.0966	.4169	.0697	.0007	.0017
.899	-.12	3.51	12.04	.5135	.0389	-.0179	-.0882	.5314	.1270	-.0142	-.0090
.897	-.13	3.50	16.00	.5663	.1057	-.0195	-.0804	.5858	.1861	-.0312	-.0232
.903	.16	5.02	-1.98	-.1184	-.1476	-.0074	-.1647	-.1110	.0170	.0093	-.0120
.902	.15	5.02	.02	-.0061	-.1504	-.0178	-.1640	.0117	.0136	.0189	-.0026
.903	.15	5.02	2.04	.1103	-.1476	-.0263	-.1633	.1366	.0157	.0266	.0050
.902	.15	5.02	4.00	.2268	-.1381	-.0352	-.1630	.2620	.0249	.0296	.0076
.899	.12	5.00	8.00	.4016	-.0891	-.0336	-.1563	.4352	.0672	.0098	-.0009
.899	.05	5.01	12.03	.5265	-.0219	-.0396	-.1475	.5661	.1255	-.0054	-.0108
.900	.06	5.00	15.94	.5893	.0478	-.0411	-.1390	.6304	.1868	-.0255	-.0245
.901	.19	7.00	-.00	.0157	-.2298	.0056	-.2435	.0101	.0137	.0012	-.0033
.900	.22	6.99	4.00	.2554	-.2154	-.0190	-.2438	.2744	.0284	.0144	.0091
.901	.19	7.00	8.01	.4409	-.1646	-.0289	-.2390	.4699	.0744	-.0050	-.0019
.901	-.06	7.00	16.00	.6527	-.0191	-.0455	-.2232	.6982	.2041	-.0467	-.0278
1.194	-.28	6.99	16.59	.7637	.1242	.0086	-.1297	.7551	.2538	-.1041	-.0609
1.198	-.03	9.02	.00	.0250	-.1431	.0271	-.1692	-.0021	.0261	-.0180	.0000
1.202	-.00	9.08	4.01	.2195	-.1286	.0175	-.1711	.2020	.0425	-.0333	-.0111
1.199	.21	9.03	8.05	.4148	-.0866	.0123	-.1725	.4026	.0858	-.0568	-.0264
1.199	-.03	9.04	12.05	.5988	-.0199	.0124	-.1753	.5864	.1554	-.0873	-.0446
1.198	-.09	9.02	16.65	.7966	.0857	.0074	-.1770	.7892	.2627	-.1195	-.0648
1.199	10.09	.81	-2.01	-.0896	.0549	.0045	.0249	-.0940	.0300	.0047	.0088
1.200	10.08	.81	-.02	-.0013	.0514	.0077	.0249	-.0090	.0265	-.0023	.0039
1.202	10.05	.80	2.03	.0902	.0543	.0092	.0246	.0809	.0297	-.0087	-.0014
1.201	10.04	.80	4.01	.1771	.0631	.0105	.0242	.1666	.0389	-.0146	-.0072
1.200	10.04	.78	6.02	.2629	.0778	.0084	.0235	.2546	.0543	-.0194	-.0143
1.200	10.04	.75	8.03	.3472	.0995	.0091	.0237	.3380	.0758	-.0283	-.0228
1.197	10.05	.68	12.00	.5105	.1611	.0173	.0243	.4932	.1368	-.0512	-.0399
1.201	10.06	.61	16.53	.6779	.2545	.0282	.0218	.6497	.2327	-.0753	-.0553
1.199	10.04	5.01	-2.02	-.0819	-.0424	.0185	-.0706	-.1005	.0281	-.0032	.0068
1.199	10.01	5.02	.01	.0132	-.0457	.0162	-.0715	-.0030	.0258	-.0100	.0016
1.199	10.01	5.03	1.98	.1026	-.0424	.0144	-.0724	.0882	.0300	-.0166	-.0035
1.201	10.01	5.03	4.00	.1969	-.0326	.0133	-.0729	.1836	.0404	-.0243	-.0093
1.199	9.99	5.02	8.02	.3807	.0067	.0149	-.0745	.3657	.0812	-.0473	-.0243
1.200	9.78	5.03	12.03	.5611	.0720	.0235	-.0777	.5375	.1497	-.0796	-.0427
1.199	9.91	5.02	16.70	.7526	.1761	.0318	-.0828	.7207	.2590	-.1136	-.0600
1.199	9.80	7.00	-2.02	-.0684	-.0890	.0381	-.1156	-.1065	.0267	-.0182	.0063
1.200	9.99	7.01	-.02	.0273	-.0913	.0356	-.1170	-.0083	.0257	-.0259	.0012
1.201	9.99	7.00	2.05	.1230	-.0866	.0318	-.1179	.0912	.0313	-.0332	-.0041
1.202	9.85	7.04	4.02	.2175	-.0766	.0290	-.1195	.1885	.0429	-.0410	-.0098
1.199	9.76	7.01	8.01	.4035	-.0363	.0257	-.1219	.3777	.0856	-.0625	-.0245
1.200	9.76	7.05	12.06	.5875	.0299	.0289	-.1265	.5586	.1564	-.0936	-.0433
1.198	9.76	7.04	16.72	.7829	.1363	.0262	-.1277	.7567	.2640	-.1275	-.0660
.905	10.06	1.03	-2.02	-.1129	.0198	.0082	.0022	-.1211	.0176	-.0113	-.0080
.901	10.04	1.02	-.01	-.0054	.0168	.0035	.0025	-.0089	.0142	-.0021	-.0002
.903	10.04	1.02	2.00	.1042	.0200	.0000	.0025	.1041	.0175	.0078	.0082
.902	10.04	1.02	4.00	.2147	.0299	-.0028	.0023	.2175	.0276	.0134	.0116
.898	10.05	1.02	5.99	.3252	.0483	-.0069	.0023	.3322	.0460	.0136	.0087
.902	9.96	1.01	8.00	.3853	.0754	-.0005	.0052	.3859	.0702	.0038	.0039
.897	9.86	.95	11.98	.4779	.1395	.0020	.0165	.4759	.1230	-.0075	-.0064

TABLE B10.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.899	10.06	.87	15.96	.5201	.2069	.0085	.0264	.5116	.1805	-.0236	-.0202
.899	10.03	3.52	-2.00	-.0922	-.0839	.0353	-.0977	-.1275	.0138	-.0314	-.0113
.903	10.01	3.54	-.00	.0194	-.0850	.0275	-.0983	-.0081	.0133	-.0222	-.0022
.903	10.00	3.54	2.00	.1317	-.0813	.0194	-.0991	.1123	.0177	-.0139	.0066
.901	10.00	3.54	4.01	.2485	-.0705	.0123	-.1004	.2362	.0299	-.0089	.0105
.900	9.76	3.53	8.00	.4314	-.0220	.0072	-.0989	.4242	.0769	-.0213	.0018
.899	9.83	3.53	12.01	.5408	.0453	.0068	-.0926	.5340	.1378	-.0403	-.0104
.901	10.06	3.54	16.11	.6222	.1247	.0099	-.0862	.6123	.2109	-.0622	-.0234
.900	10.25	5.00	-2.00	-.0844	-.1431	.0454	-.1561	-.1298	.0130	-.0377	-.0128
.904	9.99	5.01	-.01	.0284	-.1434	.0366	-.1564	-.0082	.0130	-.0298	-.0036
.899	10.23	4.99	2.02	.1457	-.1394	.0255	-.1577	.1201	.0183	-.0212	.0056
.897	10.03	4.99	4.04	.2660	-.1285	.0165	-.1590	.2495	.0305	-.0151	.0112
.902	10.01	5.04	8.02	.4517	-.0788	.0058	-.1583	.4459	.0796	-.0289	.0002
.901	9.89	5.04	12.02	.5629	-.0115	-.0039	-.1519	.5668	.1405	-.0430	-.0121
.900	10.24	5.03	16.09	.6479	.0678	-.0050	-.1459	.6529	.2137	-.0646	-.0250
.602	10.28	1.00	-2.03	-.0832	.0161	.0067	.0041	-.0899	.0120	-.0081	-.0059
.600	10.29	1.00	-.00	.0003	.0155	.0020	.0044	-.0017	.0112	-.0015	.0005
.600	10.29	1.00	2.00	.0850	.0172	-.0003	.0047	.0853	.0125	.0060	.0070
.601	9.82	1.00	4.02	.1742	.0220	-.0009	.0051	.1751	.0168	.0137	.0141
.601	10.02	.99	6.03	.2609	.0331	-.0021	.0055	.2630	.0276	.0221	.0213
.602	10.28	.99	8.03	.3434	.0552	-.0045	.0067	.3479	.0485	.0238	.0207
.600	10.05	.99	11.99	.4930	.1228	-.0012	.0088	.4941	.1139	-.0049	-.0048
.601	10.06	.98	15.59	.5819	.1917	.0064	.0116	.5755	.1801	-.0242	-.0177
.601	10.02	3.53	-2.02	-.0368	-.2114	.0536	-.2184	-.0904	.0070	-.0447	-.0114
.602	10.03	3.53	.01	.0703	-.2066	.0540	-.2166	.0163	.0100	-.0498	-.0060
.602	10.01	3.53	2.01	.1660	-.2017	.0444	-.2176	.1215	.0159	-.0457	.0003
.602	10.01	3.52	4.04	.2645	-.1937	.0353	-.2183	.2292	.0246	-.0410	.0071
.602	10.01	3.52	7.98	.4527	-.1558	.0165	-.2200	.4363	.0643	-.0334	.0147
.601	10.01	3.52	12.02	.6292	-.0782	.0033	-.2205	.6259	.1423	-.0642	-.0121
.598	10.14	3.52	15.69	.7522	.0025	-.0025	-.2218	.7548	.2243	-.0873	-.0264
.602	9.93	5.02	.01	.0772	-.3392	.0559	-.3490	.0213	.0098	-.0512	-.0082
.601	9.92	5.01	4.00	.2801	-.3283	.0294	-.3520	.2507	.0237	-.0435	.0041
.600	9.89	5.01	8.05	.4829	-.2887	.0007	-.3539	.4822	.0652	-.0390	.0099
.598	9.75	5.00	15.64	.7991	-.1262	-.0351	-.3516	.8342	.2253	-.0921	-.0307

TABLE B11.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH INVERTED SERN, A/B POWER

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.598	-5.86	.99	-2.01	-.0629	.0161	.0131	.0048	-.0760	.0113	-.0170	-.0078
.598	-5.85	.99	-.01	.0213	.0160	.0110	.0047	.0103	.0112	-.0118	-.0021
.604	-5.85	.99	2.01	.1070	.0179	.0095	.0047	.0974	.0132	-.0069	.0036
.601	-5.85	.99	4.01	.1973	.0238	.0109	.0046	.1864	.0191	-.0017	.0103
.600	-5.84	.99	5.99	.2861	.0357	.0114	.0045	.2747	.0312	.0046	.0170
.600	-5.13	.99	8.02	.3746	.0589	.0100	.0039	.3646	.0550	.0040	.0152
.598	-.27	.99	12.01	.5236	.1265	.0092	.0046	.5144	.1219	-.0160	-.0058
.595	-.27	.98	15.70	.6204	.2019	.0187	.0059	.6017	.1961	-.0392	-.0214
.603	-.26	.99	-2.02	-.0704	.0152	.0088	.0044	-.0792	.0108	-.0139	-.0087
.602	-.27	.99	.00	.0149	.0149	.0058	.0044	.0091	.0106	-.0081	-.0025
.600	-.27	1.00	2.00	.0988	.0169	.0045	.0042	.0942	.0128	-.0017	.0037
.602	-.28	.99	3.97	.1874	.0222	.0056	.0043	.1818	.0179	.0037	.0104
.599	-.27	.99	5.98	.2775	.0341	.0064	.0043	.2711	.0299	.0098	.0173
.601	-.27	.99	8.00	.3659	.0576	.0065	.0041	.3594	.0535	.0069	.0145
.601	-.18	2.04	-1.99	-.0628	-.0874	.0187	-.0956	-.0815	.0081	-.0241	-.0118
.600	-.19	2.01	.02	.0259	-.0856	.0135	-.0945	.0125	.0088	-.0198	-.0058
.598	-.18	2.02	2.01	.1168	-.0840	.0091	-.0958	.1076	.0118	-.0148	.0003
.598	.04	2.02	3.99	.2070	-.0787	.0051	-.0963	.2019	.0177	-.0084	.0071
.597	.04	2.02	6.00	.3931	-.0421	-.0023	-.0964	.3954	.0543	-.0055	.0114
.597	.04	2.02	8.00	.3922	-.0420	-.0023	-.0961	.3944	.0541	-.0053	.0115
.600	.04	2.02	12.02	.5545	.0300	-.0058	-.0945	.5603	.1245	-.0330	-.0124
.600	.04	2.02	15.72	.6624	.1067	-.0034	-.0936	.6658	.2003	-.0554	-.0263
.600	.01	3.50	-2.02	-.0757	-.2167	.0150	-.2249	-.0907	.0082	-.0210	-.0134
.600	.03	3.51	-.02	.0175	-.2183	.0053	-.2264	.0123	.0081	-.0170	-.0074
.601	.02	3.50	1.99	.1155	-.2141	-.0033	-.2243	.1187	.0102	-.0121	-.0010
.602	.02	3.51	4.02	.2130	-.2091	-.0119	-.2248	.2249	.0157	-.0062	.0059
.599	.02	3.50	8.00	.4094	-.1724	-.0285	-.2240	.4379	.0516	-.0045	.0097
.598	.02	3.51	11.99	.5817	-.1010	-.0410	-.2219	.6227	.1209	-.0325	-.0141
.601	.02	3.51	15.66	.6982	-.0208	-.0458	-.2170	.7440	.1962	-.0561	-.0287
.598	-.05	5.01	.01	.0477	-.3564	.0285	-.3628	.0192	.0063	-.0491	-.0096
.599	.01	5.01	4.02	.2502	-.3498	-.0005	-.3635	.2507	.0176	-.0385	.0037
.601	-.05	5.03	8.04	.4559	-.3039	-.0282	-.3608	.4841	.0569	-.0357	.0079
.600	-.00	5.03	15.63	.7658	-.1476	-.0653	-.3548	.8311	.2072	-.0857	-.0303
.900	.02	1.01	-2.02	-.1053	.0187	.0048	.0014	-.1101	.0173	-.0147	-.0129
.897	.03	1.01	-.00	.0038	.0162	.0012	.0017	.0026	.0144	-.0051	-.0040
.898	.04	1.01	2.03	.1127	.0192	-.0012	.0019	.1140	.0174	.0050	.0054
.900	.05	1.02	4.04	.2273	.0297	-.0034	.0015	.2307	.0282	.0092	.0083
.899	.05	1.02	6.01	.3308	.0490	-.0049	.0017	.3357	.0473	.0076	.0058
.903	-.18	1.02	8.01	.3915	.0761	-.0024	.0044	.3939	.0717	.0006	.0008
.898	-.26	.86	16.01	.5300	.2101	.0140	.0236	.5160	.1865	-.0337	-.0225
.899	.05	1.99	-2.02	-.1032	-.0266	.0101	-.0414	-.1133	.0149	-.0184	-.0138
.901	.19	1.99	.01	.0075	-.0291	.0046	-.0415	.0029	.0124	-.0094	-.0043
.900	-.07	2.01	2.00	.1177	-.0266	.0019	-.0425	.1158	.0159	-.0015	.0048
.900	.02	2.01	4.02	.2291	-.0166	-.0065	-.0430	.2356	.0264	.0068	.0088
.900	.01	2.01	8.00	.4004	.0317	-.0020	-.0399	.4025	.0716	-.0084	-.0001
.900	.37	2.02	16.04	.5548	.1652	.0013	-.0247	.5535	.1899	-.0402	-.0249
.900	-.15	3.53	-2.00	-.1012	-.0871	.0130	-.1018	-.1142	.0147	-.0203	-.0147
.900	-.13	3.53	-.03	.0086	-.0896	.0051	-.1021	.0035	.0125	-.0114	-.0052
.901	-.14	3.53	2.03	.1214	-.0858	-.0026	-.1018	.1240	.0160	-.0019	.0037
.903	-.13	3.54	3.98	.2337	-.0755	-.0110	-.1020	.2446	.0265	.0037	.0067
.902	-.15	3.53	8.00	.4143	-.0259	-.0106	-.0983	.4249	.0725	-.0127	-.0019
.899	-.26	3.52	16.05	.5891	.1111	-.0125	-.0842	.6016	.1953	-.0493	-.0266
.902	-.16	5.01	-2.01	-.0999	-.1454	.0259	-.1612	-.1258	.0158	-.0352	-.0164
.901	-.17	5.01	.00	.0182	-.1495	.0160	-.1617	.0023	.0122	-.0259	-.0064
.902	-.17	5.02	2.01	.1324	-.1463	.0054	-.1624	.1271	.0161	-.0158	.0034
.900	-.18	5.00	3.98	.2485	-.1353	-.0044	-.1621	.2529	.0267	-.0100	.0079
.898	.03	5.01	8.02	.4347	-.0862	-.0100	-.1603	.4447	.0741	-.0274	-.0022
.897	-.14	4.99	15.95	.6073	.0509	-.0314	-.1428	.6387	.1937	-.0527	-.0273
.902	.09	6.99	.05	.0086	-.2304	-.0047	-.2422	.0133	.0119	-.0093	-.0040
.901	-.19	6.98	4.02	.2450	-.2159	-.0287	-.2410	.2737	.0252	.0030	.0079
.902	-.17	7.03	8.01	.4302	-.1656	-.0365	-.2366	.4667	.0711	-.0167	-.0024
.899	-.13	7.00	15.88	.6160	-.0316	-.0718	-.2155	.6878	.1839	-.0396	-.0279
.901	-4.88	1.00	-2.05	-.1028	.0196	.0104	.0026	-.1131	.0171	-.0195	-.0128
.902	-4.87	1.00	-.04	.0064	.0171	.0077	.0025	-.0013	.0146	-.0102	-.0040
.901	-4.87	1.00	2.00	.1173	.0205	.0048	.0024	.1125	.0180	-.0015	.0047
.902	-4.87	1.00	4.00	.2283	.0309	.0030	.0019	.2253	.0290	.0025	.0079

TABLE B11.- Continued

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.900	-4.97	1.01	6.00	.3362	.0505	.0016	.0017	.3346	.0488	.0013	.0058
.897	-4.98	1.01	8.01	.4009	.0769	.0054	.0035	.3955	.0734	-.0070	.0005
.900	-4.88	.95	11.99	.4846	.1421	.0093	.0137	.4753	.1284	-.0198	-.0095
.897	-4.77	.86	16.03	.5396	.2135	.0201	.0218	.5196	.1917	-.0399	-.0224
.903	-5.24	3.51	-1.98	-.0842	-.0850	.0311	-.0984	-.1153	.0134	-.0371	-.0145
.903	-4.99	3.52	-.04	.0238	-.0873	.0239	-.1000	-.0001	.0126	-.0286	-.0061
.903	-4.99	3.53	2.01	.1376	-.0836	.0148	-.1011	.1228	.0176	-.0194	.0027
.902	-5.00	3.53	4.00	.2506	-.0731	.0068	-.1022	.2438	.0291	-.0128	.0076
.899	-4.98	3.52	8.01	.4375	-.0235	.0038	-.1008	.4337	.0773	-.0271	-.0012
.901	-4.99	3.52	12.00	.5341	.0442	.0043	-.0934	.5298	.1377	-.0480	-.0145
.901	-5.04	3.52	16.13	.6156	.1205	.0042	-.0884	.6114	.2089	-.0667	-.0265
1.198	-5.01	.81	-2.02	-.0862	.0538	-.0018	.0225	-.0844	.0313	.0067	.0047
1.203	-5.00	.80	-.00	.0034	.0505	.0013	.0228	.0021	.0277	-.0008	-.0002
1.202	-5.00	.79	1.98	.0919	.0537	.0044	.0234	.0876	.0304	-.0083	-.0051
1.200	-5.01	.79	4.01	.1820	.0634	.0085	.0236	.1735	.0398	-.0164	-.0105
1.200	-4.99	.78	5.99	.2604	.0761	.0020	.0224	.2583	.0537	-.0185	-.0175
1.200	-4.99	.76	7.98	.3462	.0977	.0081	.0222	.3381	.0755	-.0312	-.0251
1.202	-4.99	.72	12.01	.5148	.1596	.0235	.0199	.4912	.1397	-.0621	-.0427
1.201	-4.98	.68	16.64	.6922	.2570	.0388	.0144	.6534	.2426	-.0932	-.0587
1.201	-4.76	7.08	-2.01	-.0844	-.0938	.0044	-.1229	-.0888	.0291	-.0007	.0018
1.200	-4.98	6.99	-.01	.0103	-.0947	.0016	-.1209	.0087	.0262	-.0084	-.0031
1.198	-4.99	6.99	1.99	.1042	-.0914	-.0015	-.1209	.1057	.0296	-.0152	-.0081
1.200	-5.00	7.03	4.03	.1996	-.0818	-.0044	-.1213	.2040	.0395	-.0228	-.0139
1.202	-5.00	7.03	8.03	.3843	-.0414	-.0058	-.1206	.3901	.0792	-.0452	-.0289
1.199	-4.99	7.03	12.03	.5674	.0234	-.0004	-.1228	.5678	.1462	-.0767	-.0472
1.198	-4.97	7.03	16.66	.7620	.1270	.0035	-.1264	.7585	.2534	-.1092	-.0650
1.201	-.12	.81	-2.00	-.0884	.0548	-.0067	.0222	-.0817	.0326	.0113	.0041
1.200	-.09	.80	-.02	-.0006	.0512	-.0044	.0230	.0038	.0282	.0045	-.0008
1.202	-.09	.79	1.96	.0879	.0544	-.0011	.0237	.0890	.0307	-.0026	-.0059
1.199	-.09	.78	3.97	.1767	.0638	.0029	.0243	.1738	.0395	-.0108	-.0114
1.199	.15	.78	6.00	.2546	.0760	-.0059	.0238	.2605	.0522	-.0103	-.0185
1.202	.14	.76	8.02	.3411	.0971	-.0000	.0232	.3411	.0739	-.0234	-.0262
1.199	.13	.69	16.61	.6856	.2544	.0318	.0170	.6538	.2374	-.0833	-.0574
1.200	.02	5.02	-2.01	-.0794	-.0452	.0099	-.0737	-.0893	.0285	-.0050	.0026
1.202	.07	5.03	-.01	.0119	-.0481	.0070	-.0740	.0049	.0259	-.0110	-.0024
1.202	.08	5.02	2.01	.1032	-.0439	.0050	-.0733	.0982	.0294	-.0174	-.0075
1.201	.08	5.01	3.99	.1943	-.0338	.0037	-.0730	.1906	.0393	-.0243	-.0130
1.201	-.19	5.01	8.00	.3660	.0029	-.0089	-.0728	.3748	.0756	-.0343	-.0282
1.200	.05	5.01	16.65	.7342	.1675	.0082	-.0789	.7260	.2464	-.0984	-.0640
1.200	-.17	7.01	-2.03	-.0918	-.0917	-.0046	-.1219	-.0872	.0301	.0073	.0017
1.201	-.18	7.01	-.02	.0027	-.0947	-.0084	-.1210	.0110	.0263	.0007	-.0034
1.201	-.19	7.02	2.01	.0968	-.0916	-.0119	-.1206	.1087	.0289	-.0054	-.0085
1.202	-.18	7.01	4.02	.1914	-.0813	-.0144	-.1193	.2058	.0380	-.0133	-.0144
1.199	-.19	7.00	8.02	.3765	-.0421	-.0167	-.1183	.3932	.0761	-.0346	-.0294
1.199	.04	6.99	16.60	.7489	.1237	-.0087	-.1211	.7575	.2448	-.0962	-.0655
1.199	-.11	9.02	-.01	-.0099	-.1427	-.0263	-.1693	.0164	.0266	.0130	-.0044
1.204	-.07	9.02	4.04	.1840	-.1287	-.0351	-.1650	.2191	.0362	-.0014	-.0155
1.199	-.07	8.99	8.01	.3764	-.0896	-.0374	-.1628	.4138	.0732	-.0254	-.0309
1.198	-.17	8.98	16.54	.7569	.0766	-.0335	-.1623	.7904	.2389	-.0884	-.0669
1.201	10.02	.82	-2.00	-.0893	.0545	-.0084	.0231	-.0808	.0314	.0133	.0042
1.200	9.80	.81	-.03	-.0022	.0516	-.0061	.0239	.0039	.0276	.0064	-.0008
1.200	10.29	.80	1.99	.0879	.0547	-.0023	.0245	.0902	.0301	-.0012	-.0058
1.202	10.29	.79	4.00	.1763	.0638	.0020	.0247	.1744	.0391	-.0099	-.0117
1.200	9.58	.78	5.97	.2533	.0761	-.0076	.0249	.2610	.0512	-.0085	-.0186
1.200	9.80	.77	8.02	.3381	.0976	-.0040	.0251	.3422	.0724	-.0188	-.0262
1.198	9.60	.69	16.58	.6809	.2549	.0274	.0207	.6535	.2342	-.0767	-.0577
1.202	9.99	5.03	-2.02	-.0972	-.0410	-.0158	-.0726	-.0814	.0317	.0172	.0019
1.200	9.98	5.02	-.01	-.0054	-.0449	-.0173	-.0719	.0118	.0270	.0109	-.0032
1.202	9.97	5.02	2.00	.0868	-.0418	-.0181	-.0710	.1049	.0291	.0041	-.0083
1.198	9.98	4.99	4.03	.1779	-.0328	-.0235	-.0701	.2014	.0373	-.0007	-.0144
1.197	9.99	4.99	8.00	.3571	.0052	-.0232	-.0679	.3802	.0731	-.0208	-.0294
1.198	9.97	4.99	16.57	.7176	.1665	-.0085	-.0688	.7261	.2353	-.0785	-.0647
1.199	9.98	7.03	-2.01	-.1122	-.0867	-.0354	-.1197	-.0768	.0330	.0333	.0006
1.200	9.98	7.02	-.02	-.0182	-.0902	-.0379	-.1177	.0197	.0274	.0262	-.0045
1.203	10.02	7.03	2.02	.0743	-.0876	-.0427	-.1154	.1170	.0278	.0204	-.0100
1.202	10.00	7.01	4.00	.1684	-.0782	-.0441	-.1132	.2125	.0350	.0118	-.0160
1.200	10.01	7.02	8.00	.3549	-.0405	-.0436	-.1104	.3985	.0699	-.0115	-.0313
1.199	9.99	7.02	16.50	.7238	.1199	-.0337	-.1087	.7575	.2286	-.0703	-.0665
.601	-5.03	.98	-2.01	-.0631	.0151	.0155	.0073	-.0786	.0078	-.0193	-.0089
.603	-5.03	.98	-.02	.0205	.0150	.0130	.0070	.0076	.0080	-.0139	-.0027

TABLE B11.- Concluded

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.602	-5.03	.98	1.98	.1054	.0175	.0117	.0070	.0937	.0105	-.0087	.0036
.602	-5.04	.98	3.99	.1964	.0234	.0130	.0070	.1834	.0164	-.0033	.0106
.603	-5.03	.98	6.01	.2873	.0359	.0138	.0067	.2735	.0293	.0027	.0175
.603	-5.04	.98	8.00	.3759	.0599	.0127	.0061	.3632	.0538	-.0010	.0128
.600	-5.04	.98	12.02	.5272	.1284	.0154	.0061	.5118	.1223	-.0230	-.0067
.600	-5.05	.97	15.68	.6203	.2016	.0252	.0063	.5951	.1953	-.0453	-.0212
.600	-5.05	3.50	-2.03	-.0416	-.2176	.0450	-.2230	-.0866	.0053	-.0494	-.0135
.602	-5.04	3.52	-.01	.0555	-.2163	.0355	-.2242	.0200	.0079	-.0453	-.0074
.601	-5.04	3.51	2.00	.1519	-.2126	.0259	-.2255	.1260	.0128	-.0412	-.0011
.599	-5.05	3.50	4.02	.2499	-.2062	.0165	-.2267	.2334	.0205	-.0362	.0055
.601	-5.06	3.50	8.01	.4442	-.1642	-.0009	-.2255	.4451	.0613	-.0339	.0092
.601	-5.07	3.50	12.00	.6161	-.0901	-.0147	-.2245	.6308	.1344	-.0587	-.0120
.599	-5.06	3.51	15.70	.7371	-.0108	-.0196	-.2260	.7567	.2152	-.0841	-.0278

TABLE B12.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; $\delta_v = 0^\circ$

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
1.198	0.00	.78	-2.00	-.0811	.0506	.0013	.0200	-.0824	.0307	.0055	.0049
1.200	0.00	.77	.04	.0094	.0482	-.0027	.0197	.0121	.0285	.0025	.0005
1.203	0.00	.77	2.03	.0989	.0521	-.0052	.0196	.1041	.0325	-.0016	-.0043
1.202	0.00	.77	4.04	.1897	.0635	-.0073	.0203	.1970	.0432	-.0067	-.0102
1.201	0.00	.77	6.06	.2771	.0811	-.0077	.0211	.2848	.0600	-.0146	-.0173
1.199	0.00	.75	8.04	.3629	.1052	-.0065	.0230	.3694	.0822	-.0249	-.0257
1.201	0.00	.65	15.64	.6621	.2450	.0035	.0308	.6586	.2142	-.0694	-.0567
1.202	0.00	5.03	-1.99	-.0812	-.0484	-.0015	-.0779	-.0797	.0295	.0045	.0039
1.199	0.00	5.03	.03	.0155	-.0507	.0009	-.0787	.0146	.0280	-.0010	-.0006
1.197	0.00	4.98	2.06	.1094	-.0455	.0011	-.0781	.1083	.0326	-.0056	-.0058
1.207	0.00	5.03	4.06	.2040	-.0342	.0038	-.0776	.2003	.0434	-.0128	-.0119
1.203	0.00	5.01	8.07	.3862	.0076	.0099	-.0757	.3763	.0834	-.0316	-.0282
1.202	0.00	5.02	15.73	.7029	.1505	.0317	-.0687	.6712	.2192	-.0781	-.0610
1.201	0.00	6.95	-1.97	-.0799	-.0960	-.0023	-.1248	-.0777	.0288	.0032	.0032
1.203	0.00	6.96	.06	.0173	-.0977	.0008	-.1248	.0165	.0271	-.0019	-.0013
1.200	0.00	6.98	2.06	.1114	-.0944	.0013	-.1261	.1101	.0317	-.0057	-.0065
1.201	0.00	6.98	4.06	.2078	-.0827	.0047	-.1255	.2032	.0428	-.0124	-.0126
1.202	0.00	7.01	8.07	.3929	-.0403	.0148	-.1233	.3781	.0829	-.0321	-.0287
1.202	0.00	7.00	15.61	.7141	.1024	.0433	-.1144	.6708	.2168	-.0798	-.0616
1.200	0.00	9.01	.05	.0164	-.1492	-.0002	-.1759	.0166	.0267	-.0022	-.0019
1.200	0.00	8.99	4.03	.2079	-.1327	.0026	-.1751	.2052	.0424	-.0101	-.0133
1.202	0.00	9.04	8.06	.4014	-.0893	.0184	-.1721	.3829	.0829	-.0319	-.0292
1.199	0.00	8.99	15.53	.7283	.0539	.0533	-.1625	.6750	.2164	-.0796	-.0620
.901	0.00	1.03	-1.96	-.1083	.0173	-.0007	-.0007	-.1076	.0179	-.0079	-.0098
.899	0.00	1.02	.01	.0038	.0156	-.0027	.0000	.0066	.0156	.0027	.0008
.904	0.00	1.02	2.04	.1175	.0196	-.0044	-.0002	.1220	.0199	.0124	.0100
.899	0.00	1.01	4.05	.2326	.0313	-.0067	.0003	.2394	.0311	.0198	.0163
.901	0.00	1.02	6.03	.3227	.0536	-.0091	.0037	.3318	.0499	.0221	.0183
.898	0.00	.98	8.05	.3672	.0835	-.0033	.0095	.3705	.0740	.0027	.0044
.902	0.00	.80	14.98	.4811	.2003	-.0159	.0331	.4970	.1672	-.0157	-.0177
.896	0.00	2.01	.03	-.0005	-.0302	-.0070	-.0452	.0065	.0149	.0052	.0013
.900	0.00	2.00	4.03	.2366	-.0152	-.0065	-.0459	.2430	.0307	.0191	.0154
.899	0.00	2.00	8.03	.3710	.0380	.0040	-.0359	.3670	.0740	-.0012	.0030
.901	0.00	2.00	14.79	.5053	.1454	-.0027	-.0231	.5080	.1684	-.0188	-.0188
.898	0.00	3.50	-1.96	-.1114	-.0905	-.0080	-.1069	-.1033	.0164	-.0066	-.0111
.899	0.00	3.50	.01	.0012	-.0924	-.0071	-.1067	.0084	.0144	.0051	.0007
.899	0.00	3.50	2.07	.1180	-.0888	-.0059	-.1068	.1239	.0180	.0159	.0115
.900	0.00	3.52	4.02	.2398	-.0777	-.0047	-.1078	.2445	.0301	.0196	.0151
.902	0.00	3.50	8.02	.3770	-.0237	.0094	-.0968	.3675	.0731	-.0010	.0025
.899	0.00	3.51	14.85	.5227	.0837	.0100	-.0851	.5127	.1688	-.0183	-.0187
.901	0.00	4.99	-1.98	-.1117	-.1538	-.0088	-.1694	-.1029	.0157	-.0089	-.0122
.900	0.00	5.00	.06	.0058	-.1560	-.0060	-.1696	.0118	.0135	.0029	-.0002
.900	0.00	5.00	2.04	.1222	-.1527	-.0037	-.1699	.1259	.0172	.0135	.0104
.899	0.00	5.00	4.01	.2470	-.1420	-.0011	-.1712	.2481	.0292	.0179	.0143
.901	0.00	5.02	8.03	.3868	-.0877	.0166	-.1605	.3702	.0728	-.0019	.0018
.900	0.00	5.00	14.87	.5453	.0231	.0293	-.1469	.5199	.1701	-.0208	-.0198
.602	0.00	1.02	-1.98	-.0852	.0132	-.0031	.0015	-.0820	.0118	-.0048	-.0072
.603	0.00	1.02	.03	-.0027	.0128	-.0065	.0020	.0038	.0108	.0048	.0011
.604	0.00	1.02	2.00	.0824	.0142	-.0071	.0023	.0895	.0118	.0115	.0081
.604	0.00	1.02	4.02	.1729	.0189	-.0075	.0023	.1805	.0166	.0188	.0157
.600	0.00	1.01	8.04	.2642	.0313	-.0073	.0025	.2715	.0288	.0243	.0221
.599	0.00	1.01	8.02	.3528	.0573	-.0057	.0038	.3586	.0535	.0153	.0150
.601	0.00	1.00	12.02	.4932	.1251	-.0012	.0079	.4944	.1172	-.0101	-.0054
.601	0.00	.98	14.83	.5609	.1791	.0015	.0135	.5594	.1656	-.0229	-.0145
.602	0.00	2.02	.03	.0048	-.0871	-.0046	-.0982	.0095	.0111	-.0004	-.0011
.601	0.00	2.02	4.03	.1877	-.0812	-.0006	-.0989	.1883	.0177	.0149	.0139
.601	0.00	2.01	8.03	.3762	-.0408	.0091	-.0970	.3671	.0962	.0089	.0116
.602	0.00	2.01	14.87	.6037	.0837	.0278	-.0876	.5759	.1713	-.0290	-.0177
.600	0.00	3.50	-1.99	-.0832	-.2262	-.0107	-.2378	-.0725	.0115	-.0102	-.0108
.601	0.00	3.50	.03	.0096	-.2263	-.0042	-.2371	.0139	.0108	-.0031	-.0034
.600	0.00	3.50	2.04	.1060	-.2247	.0022	-.2372	.1038	.0125	.0044	.0044
.601	0.00	3.50	4.02	.2033	-.2201	.0073	-.2377	.1960	.0176	.0128	.0120
.602	0.00	3.50	8.04	.4030	-.1780	.0254	-.2344	.3777	.0564	.0069	.0102
.601	0.00	3.52	12.06	.5658	-.1091	.0460	-.2319	.5198	.1228	-.0193	-.0113
.601	0.00	3.52	14.96	.6530	-.0494	.0611	-.2249	.5919	.1756	-.0331	-.0208

TABLE B12.- Concluded

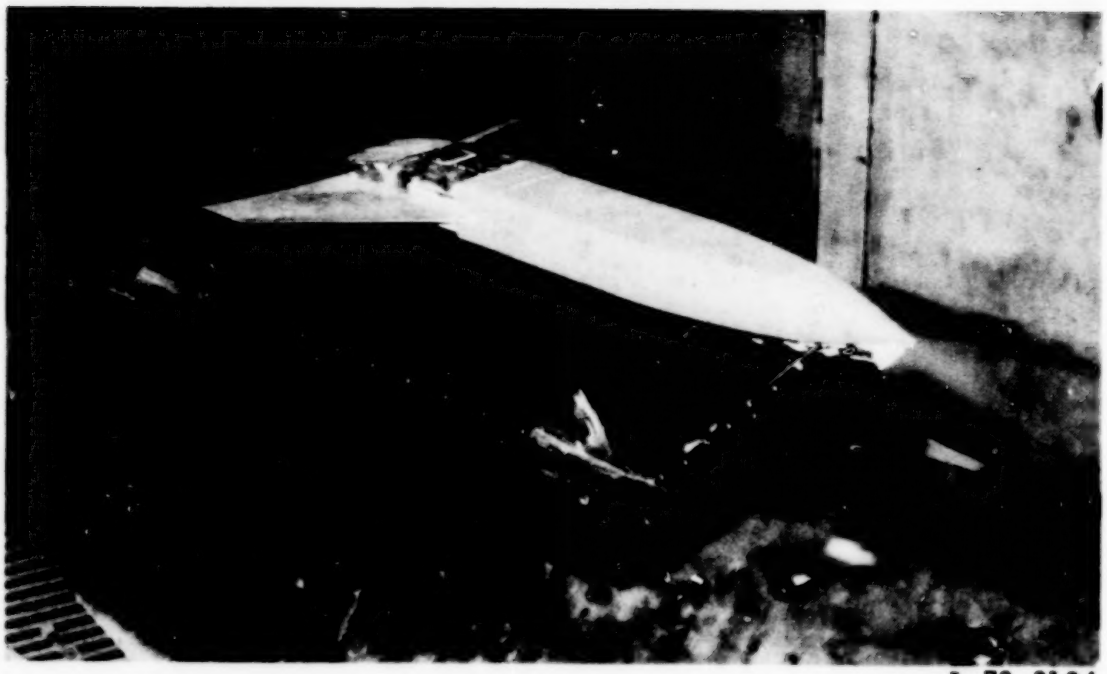
MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.601	0.00	5.00	-1.97	-.0815	-.3676	-.0155	-.3775	-.0660	.0100	-.0130	-.0127
.602	0.00	5.00	.05	.0183	-.3677	-.0041	-.3772	.0224	.0094	-.0063	-.0052
.602	0.00	5.01	2.05	.1196	-.3665	.0073	-.3780	.1124	.0115	.0004	.0022
.601	0.00	5.00	4.05	.2212	-.3610	.0181	-.3781	.2031	.0171	.0076	.0093
.601	0.00	5.00	8.04	.4314	-.3190	.0433	-.3760	.3880	.0569	.0025	.0071
.598	0.00	5.00	14.94	.7005	-.1876	.0943	-.3653	.6062	.1778	-.0356	-.0228

TABLE B13.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; $\delta_v = 10^o$

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.902	0.00	1.03	-2.00	-.1080	.0177	.0003	-.0002	-.1082	.0179	-.0089	-.0093
.900	0.00	1.03	.00	.0041	.0159	-.0024	.0003	.0064	.0156	.0025	.0017
.900	0.00	1.03	2.02	.1174	.0196	-.0036	.0002	.1211	.0194	.0127	.0117
.900	0.00	1.03	4.01	.2319	.0316	-.0063	.0003	.2382	.0313	.0176	.0152
.897	0.00	1.02	5.99	.3285	.0529	-.0065	.0027	.3350	.0502	.0173	.0156
.898	0.00	.99	8.01	.3690	.0838	-.0022	.0097	.3712	.0741	.0022	.0048
.899	0.00	.83	15.02	.4981	.2011	-.0084	.0310	.5065	.1702	-.0204	-.0168
.899	0.00	3.50	-2.01	-.0864	-.0881	.0273	-.1047	-.1137	.0166	-.0372	-.0111
.899	0.00	3.52	.04	.0315	-.0893	.0273	-.1041	.0042	.0148	-.0260	.0005
.901	0.00	3.53	2.03	.1442	-.0847	.0278	-.1035	.1163	.0187	-.0158	.0109
.898	0.00	3.51	4.02	.2667	-.0728	.0283	-.1029	.2384	.0301	-.0099	.0163
.900	0.00	3.51	8.03	.4219	-.0170	.0395	-.0927	.3824	.0757	-.0265	.0053
.899	0.00	3.50	15.20	.5756	.1048	.0431	-.0735	.5325	.1783	-.0479	-.0178
.902	0.00	5.03	-1.99	-.0777	-.1519	.0394	-.1681	-.1171	.0162	-.0475	-.0109
.899	0.00	5.02	.02	.0408	-.1528	.0412	-.1670	-.0004	.0142	-.0375	-.0002
.900	0.00	5.03	2.03	.1560	-.1469	.0432	-.1651	.1129	.0181	-.0271	.0105
.900	0.00	5.03	4.04	.2839	-.1343	.0451	-.1643	.2388	.0300	-.0220	.0153
.898	0.00	5.02	8.03	.4469	-.0801	.0595	-.1545	.3874	.0744	-.0387	.0039
.899	0.00	5.01	15.22	.6161	.0493	.0728	-.1315	.5433	.1807	-.0623	-.0189
.602	0.00	1.01	-2.02	-.0764	.0147	.0023	.0021	-.0787	.0126	-.0094	-.0074
.603	0.00	1.01	-.01	.0081	.0141	.0007	.0026	.0074	.0115	-.0019	.0000
.604	0.00	1.01	1.99	.0950	.0160	-.0002	.0032	.0953	.0128	.0053	.0073
.592	0.00	1.01	4.01	.1855	.0211	-.0000	.0036	.1856	.0175	.0117	.0145
.601	0.00	1.01	4.00	.1857	.0211	-.0002	.0036	.1859	.0175	.0121	.0148
.600	0.00	1.01	6.02	.2777	.0337	-.0000	.0040	.2777	.0297	.0181	.0215
.600	0.00	1.00	8.02	.3626	.0589	.0002	.0047	.3625	.0542	.0113	.0154
.602	0.00	.99	12.03	.5047	.1273	.0045	.0094	.5001	.1179	-.0134	-.0045
.601	0.00	.98	14.86	.5750	.1827	.0075	.0149	.5675	.1678	-.0275	-.0148
.601	0.00	3.50	-1.99	-.0201	-.2225	.0526	-.2341	-.0727	.0116	-.0690	-.0086
.602	0.00	3.50	.02	.0771	-.2193	.0581	-.2314	.0190	.0120	-.0585	-.0013
.602	0.00	3.51	2.04	.1739	-.2156	.0647	-.2301	.1092	.0145	-.0521	.0061
.602	0.00	3.50	4.03	.2698	-.2075	.0712	-.2275	.1986	.0200	-.0458	.0135
.600	0.00	3.50	8.04	.4684	-.1655	.0859	-.2228	.3824	.0573	-.0450	.0162
.602	0.00	3.52	12.05	.6365	-.0890	.1060	-.2141	.5305	.1251	-.0728	-.0064
.599	0.00	3.51	14.81	.7306	-.0277	.1214	-.2055	.6091	.1778	-.0880	-.0166
.601	0.00	5.01	.03	.1118	-.3605	.0886	-.3714	.0232	.0109	-.0828	-.0023
.599	0.00	5.00	4.04	.3164	-.3458	.1113	-.3653	.2051	.0195	-.0709	.0124
.600	0.00	5.00	8.06	.5249	-.2992	.1339	-.3558	.3910	.0586	-.0673	.0179
.600	0.00	5.01	12.02	.7066	-.2186	.1630	-.3447	.5436	.1261	-.0958	-.0056
.601	0.00	5.01	14.86	.8092	-.1503	.1836	-.3315	.6257	.1811	-.1110	-.0164
1.203	0.00	.79	-1.97	-.0784	.0500	.0009	.0198	-.0792	.0302	.0057	.0049
1.205	0.00	.79	.02	.0077	.0477	-.0031	.0199	.0108	.0279	.0028	.0002
1.202	0.00	.80	2.04	.1030	.0523	-.0030	.0200	.1060	.0323	-.0027	-.0039
1.201	0.00	.79	4.03	.1941	.0634	-.0020	.0208	.1961	.0426	-.0098	-.0090
1.199	0.00	.78	6.03	.2836	.0810	-.0009	.0220	.2845	.0590	-.0189	-.0164
1.199	0.00	.74	8.05	.3674	.1056	-.0016	.0242	.3691	.0815	-.0277	-.0249
1.199	0.00	.65	15.50	.6614	.2425	.0070	.0316	.6545	.2109	-.0712	-.0553
1.199	0.00	5.01	-1.98	-.0663	-.0451	.0229	-.0750	-.0892	.0299	-.0159	.0058
1.202	0.00	5.01	.05	.0292	-.0461	.0241	-.0736	.0051	.0275	-.0209	.0013
1.200	0.00	5.01	2.05	.1242	-.0411	.0254	-.0727	.0987	.0316	-.0258	-.0033
1.200	0.00	4.96	4.05	.2219	-.0282	.0277	-.0704	.1941	.0422	-.0325	-.0088
1.198	0.00	5.00	8.06	.4044	.0140	.0366	-.0673	.3677	.0814	-.0527	-.0242
1.200	0.00	5.03	15.71	.7230	.1586	.0579	-.0582	.6651	.2168	-.1006	-.0579
1.204	0.00	7.00	-1.95	-.0570	-.0933	.0319	-.1227	-.0889	.0295	-.0238	.0062
1.202	0.00	6.99	.03	.0346	-.0945	.0332	-.1214	.0014	.0270	-.0280	.0015
1.199	0.00	6.99	2.05	.1316	-.0894	.0353	-.1204	.0963	.0318	-.0327	-.0031
1.199	0.00	7.01	4.07	.2320	-.0773	.0392	-.1191	.1928	.0418	-.0396	-.0088
1.202	0.00	6.99	8.08	.4172	-.0319	.0502	-.1126	.3669	.0808	-.0597	-.0240
1.198	0.00	7.00	15.67	.7443	.1148	.0786	-.1011	.6657	.2159	-.1085	-.0576

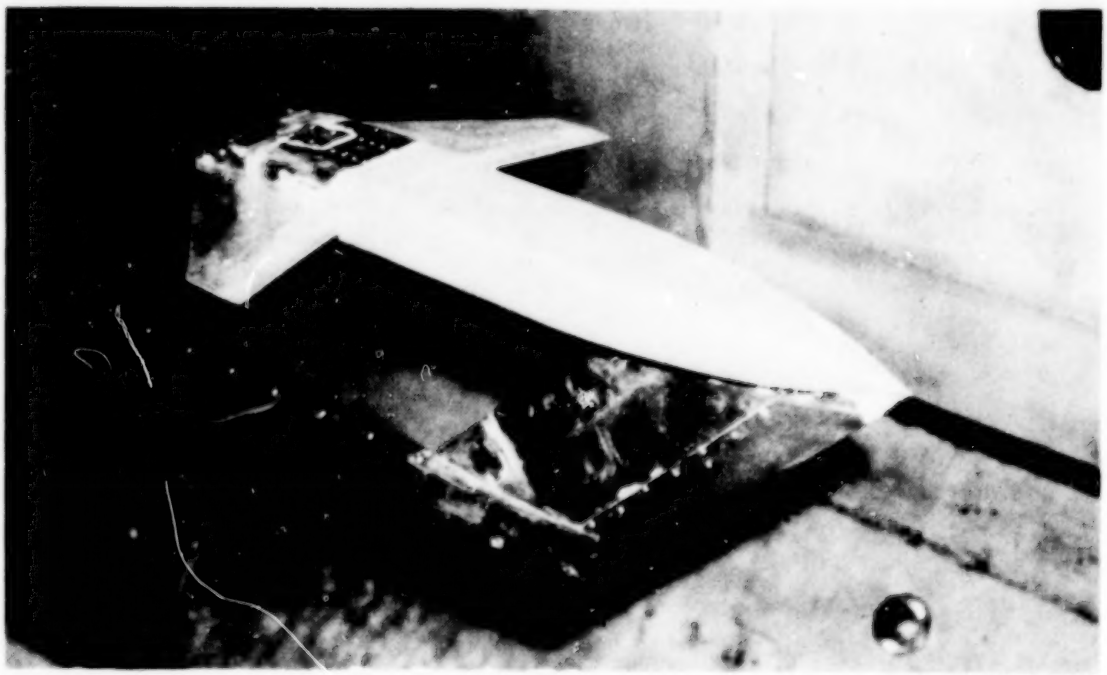
TABLE B14.- AERODYNAMIC CHARACTERISTICS FOR THE FORWARD-SWEPT WING WITH 2-D C-D NOZZLE, A/B POWER; $\delta_v = 20^o$

MACH	VEER	NPR	ALPHA	CL	C(D-F)	CLN	C(DN-F)	CLAERO	CDAERO	CM	CMAERO
.602	0.00	1.01	-1.99	-.0637	.0159	.0092	.0032	-.0729	.0127	-.0131	-.0069
.601	0.00	1.01	.02	.0245	.0161	.0077	.0036	.0168	.0125	-.0056	.0005
.602	0.00	1.01	2.02	.1126	.0189	.0071	.0044	.1056	.0146	.0012	.0076
.600	0.00	1.00	4.04	.2039	.0249	.0069	.0051	.1970	.0198	.0083	.0153
.600	0.00	1.00	6.04	.2949	.0379	.0070	.0059	.2879	.0321	.0143	.0219
.599	0.00	1.00	8.02	.3767	.0610	.0055	.0064	.3712	.0546	.0143	.0212
.600	0.00	.99	12.03	.5266	.1336	.0098	.0107	.5168	.1229	-.0163	-.0050
.600	0.00	.97	14.86	.5975	.1908	.0131	.0170	.5844	.1738	-.0316	-.0157
.599	0.00	3.50	-1.96	.0432	-.2071	.1005	-.2184	-.0572	.0113	-.1030	-.0094
.601	0.00	3.50	.05	.1381	-.2006	.1066	-.2130	.0315	.0124	-.0964	-.0025
.601	0.00	3.50	2.06	.2355	-.1939	.1126	-.2098	.1229	.0159	-.0905	.0045
.601	0.00	3.50	4.03	.3323	-.1832	.1178	-.2054	.2145	.0222	-.0842	.0122
.600	0.00	3.50	8.08	.5299	-.1382	.1287	-.1976	.4012	.0594	-.0777	.0200
.599	0.00	3.49	12.04	.7026	-.0558	.1448	-.1871	.5578	.1313	-.1074	-.0062
.602	0.00	3.50	15.15	.8042	.0196	.1591	-.1736	.6452	.1931	-.1261	-.0200
.600	0.00	4.99	.06	.1882	-.3307	.1556	-.3415	.0327	.0108	-.1319	-.0039
.601	0.00	4.98	4.06	.3921	-.3071	.1748	-.3283	.2173	.0212	-.1196	.0109
.601	0.00	4.96	8.07	.5975	-.2557	.1918	-.3137	.4057	.0579	-.1121	.0199
.601	0.00	4.98	15.20	.9022	-.0864	.2378	-.2832	.6644	.1968	-.1625	-.0225
.899	0.00	1.03	-1.95	-.1024	.0178	.0019	.0007	-.1043	.0171	-.0106	-.0098
.899	0.00	1.03	.04	.0083	.0163	-.0003	.0012	.0085	.0151	.0007	.0015
.899	0.00	1.03	2.05	.1212	.0205	-.0015	.0014	.1226	.0191	.0107	.0114
.898	0.00	1.03	4.03	.2382	.0323	-.0033	.0013	.2415	.0310	.0150	.0150
.900	0.00	1.02	6.02	.3363	.0548	-.0008	.0043	.3371	.0505	.0122	.0149
.898	0.00	.99	8.05	.3799	.0847	.0006	.0095	.3794	.0752	-.0037	.0014
.902	0.00	.84	15.05	.5099	.2036	-.0063	.0312	.5162	.1724	-.0236	-.0175
.898	0.00	3.52	-1.95	-.0606	-.0823	.0520	-.0979	-.1126	.0156	-.0602	-.0130
.898	0.00	3.50	.05	.0538	-.0814	.0520	-.0955	.0019	.0141	-.0490	-.0021
.898	0.00	3.51	2.04	.1677	-.0761	.0522	-.0943	.1154	.0182	-.0381	.0096
.903	0.00	3.50	4.03	.2907	-.0609	.0510	-.0921	.2397	.0313	-.0340	.0123
.898	0.00	3.47	8.04	.4611	-.0078	.0588	-.0845	.4023	.0767	-.0479	.0017
.899	0.00	3.48	15.17	.6189	.1217	.0651	-.0613	.5539	.1830	-.0697	-.0180
.900	0.00	5.00	-1.95	-.0456	-.1404	.0736	-.1557	-.1192	.0154	-.0761	-.0125
.899	0.00	5.01	.05	.0719	-.1402	.0758	-.1538	-.0039	.0136	-.0667	-.0027
.903	0.00	5.03	2.05	.1888	-.1328	.0765	-.1510	.1123	.0182	-.0564	.0079
.901	0.00	5.02	4.04	.3144	-.1196	.0776	-.1491	.2368	.0295	-.0501	.0142
.903	0.00	5.02	8.08	.5097	-.0628	.0863	-.1416	.4234	.0788	-.0648	.0016
.898	0.00	4.99	15.29	.6796	.0752	.1035	-.1142	.5761	.1894	-.0919	-.0210



L-79-3194

Aft-swept wing

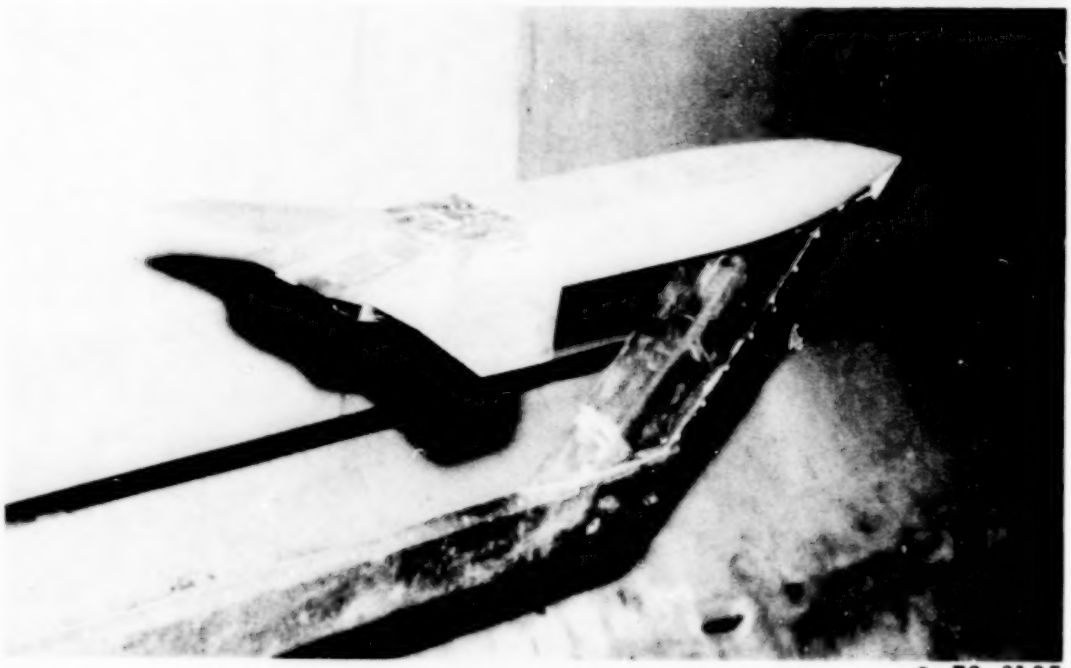


L-79-3217

Forward-swept wing

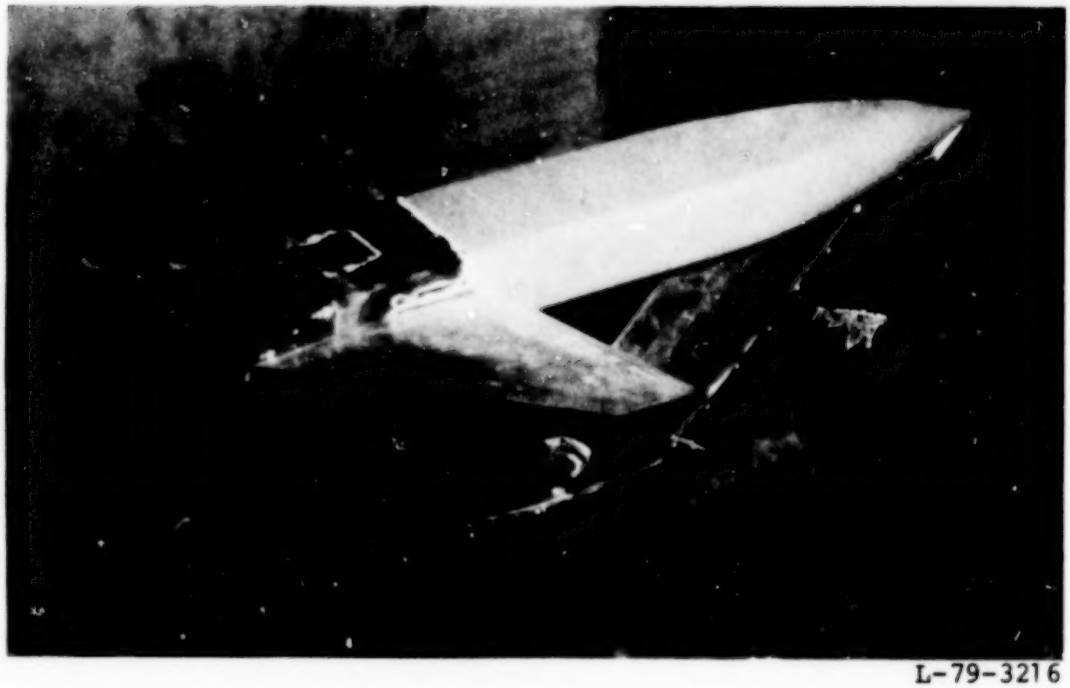
(a) Three-quarter front view.

Figure 1.- Photograph of model with upright SERN.



L-79-3195

Aft-swept wing



L-79-3216

Forward-swept wing

(b) Three-quarter rear view.

Figure 1.- Concluded.

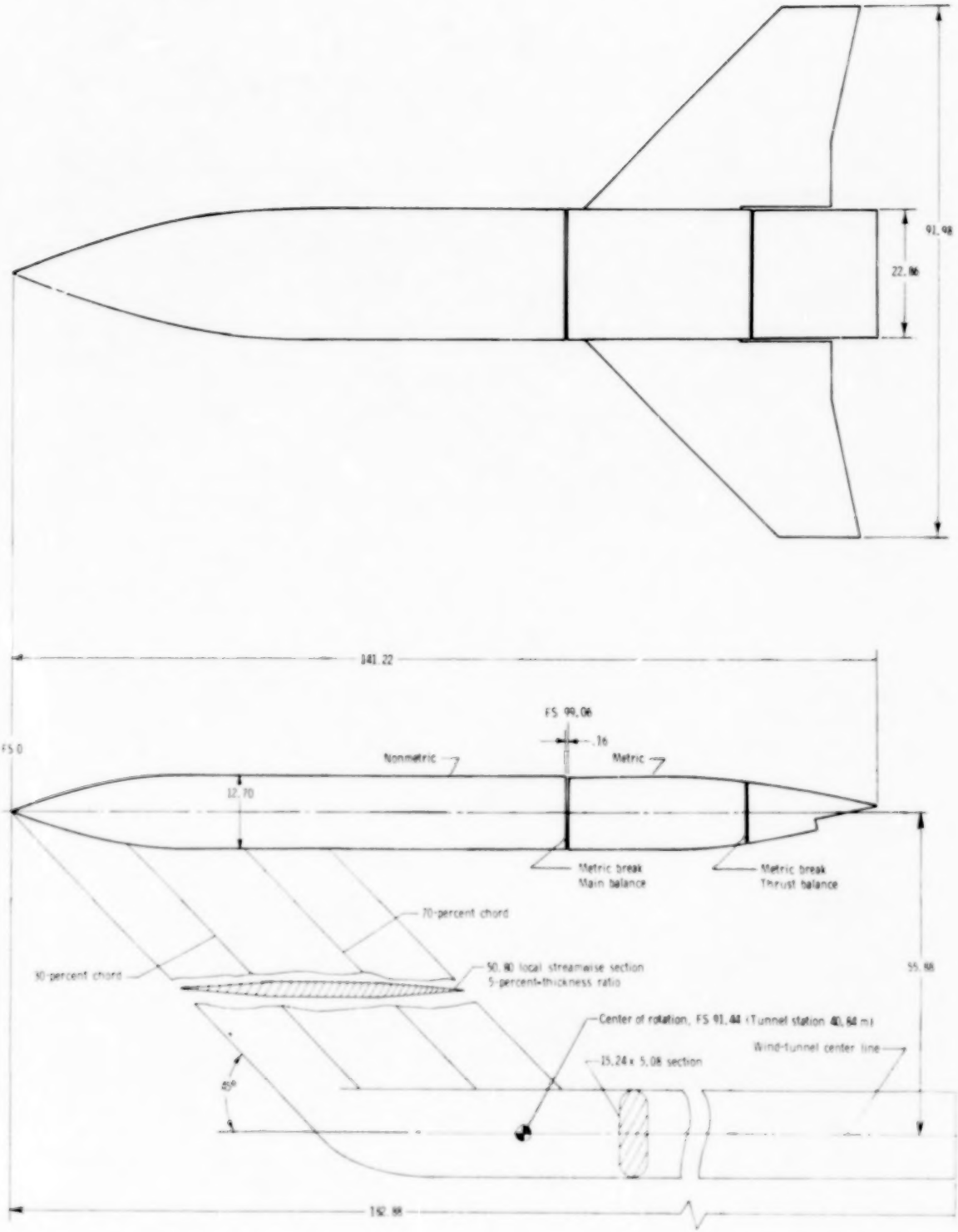


Figure 2.- General arrangement of model, aft-swept wing, upright SERN. All dimensions are in centimeters unless otherwise noted. (Note that strut cross section is shown without air passage holes.)

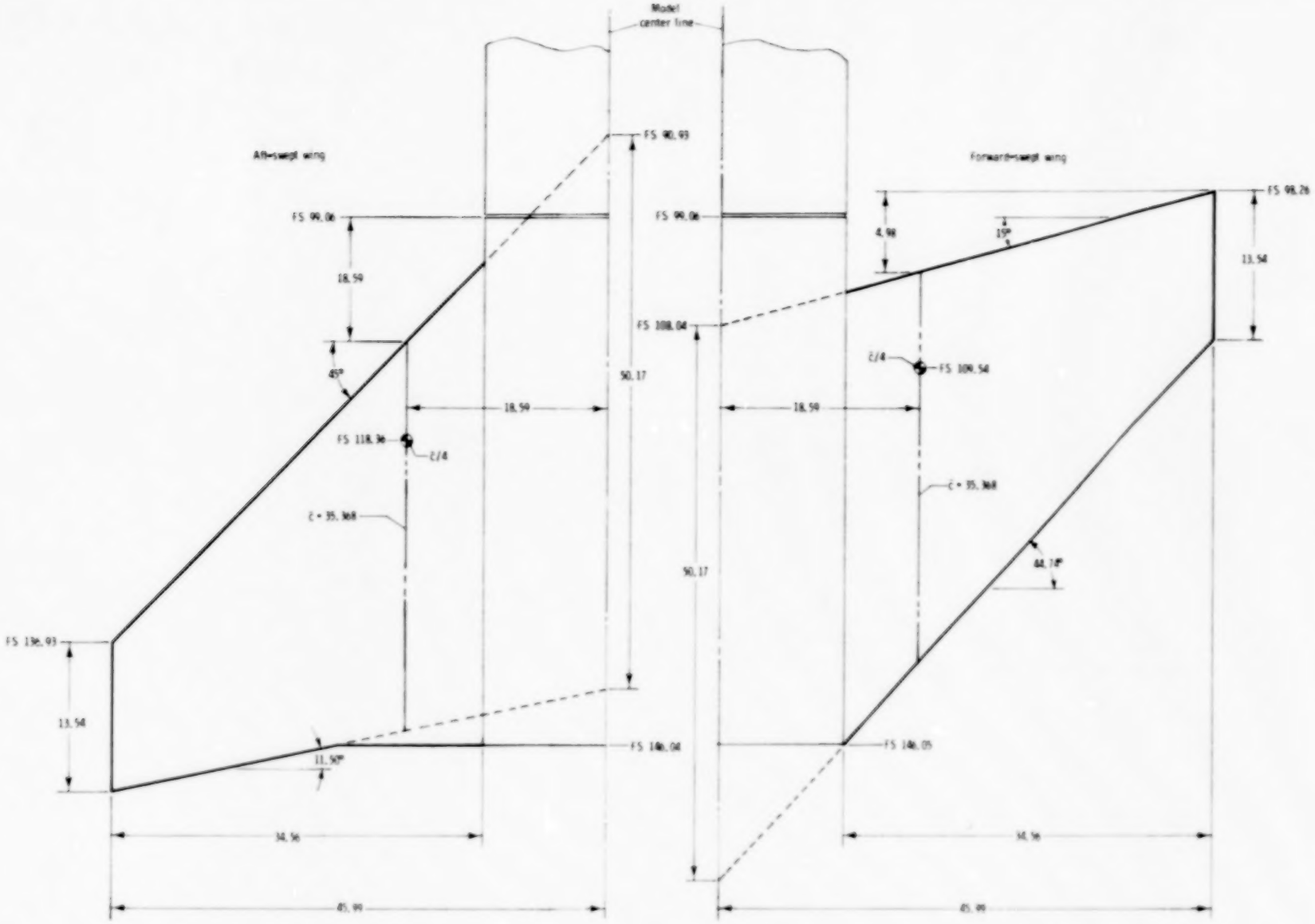


Figure 3.- Planform geometry for both aft- and forward-swept wings. All dimensions are in centimeters unless otherwise noted.

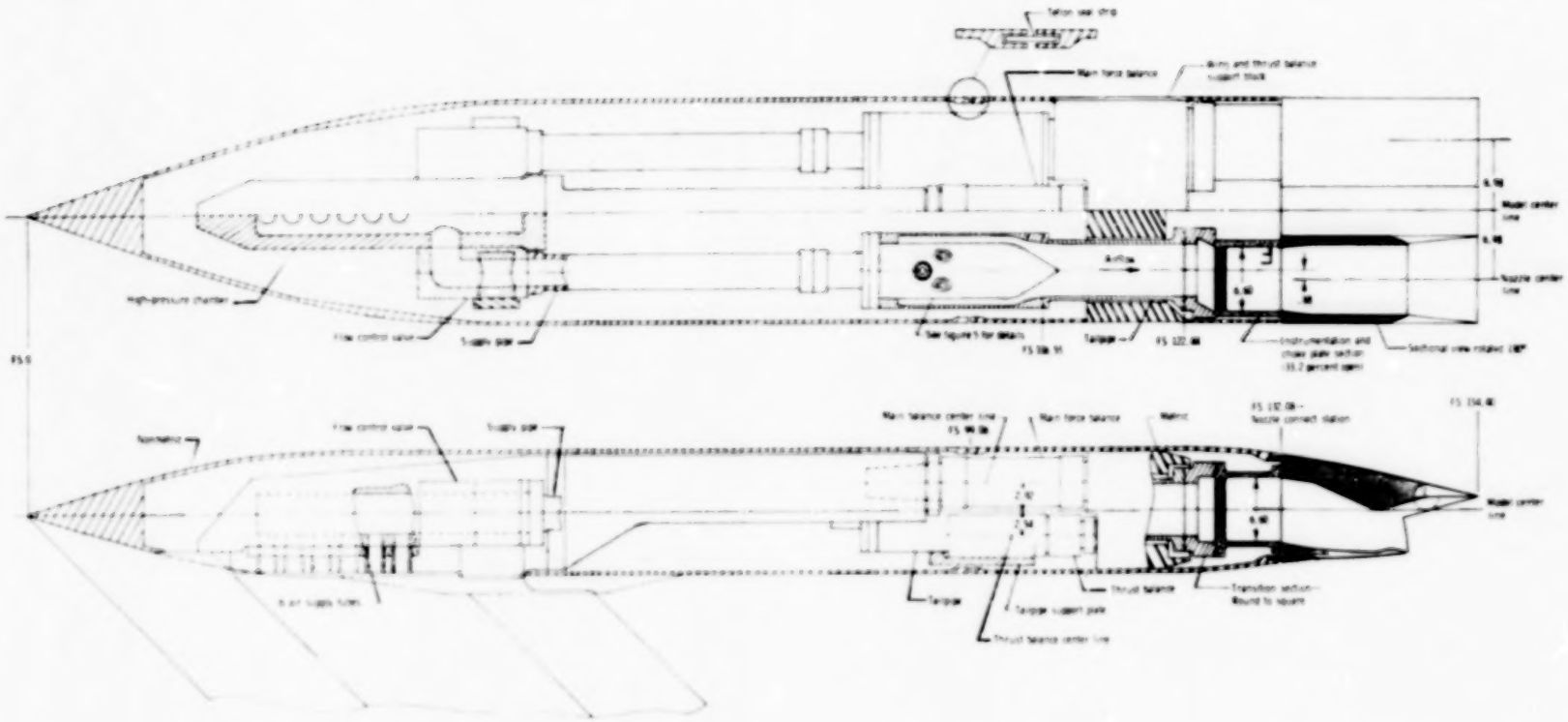


Figure 4.- Sketch of twin-jet propulsion simulation system with upright SERN. All dimensions are in centimeters unless otherwise noted.

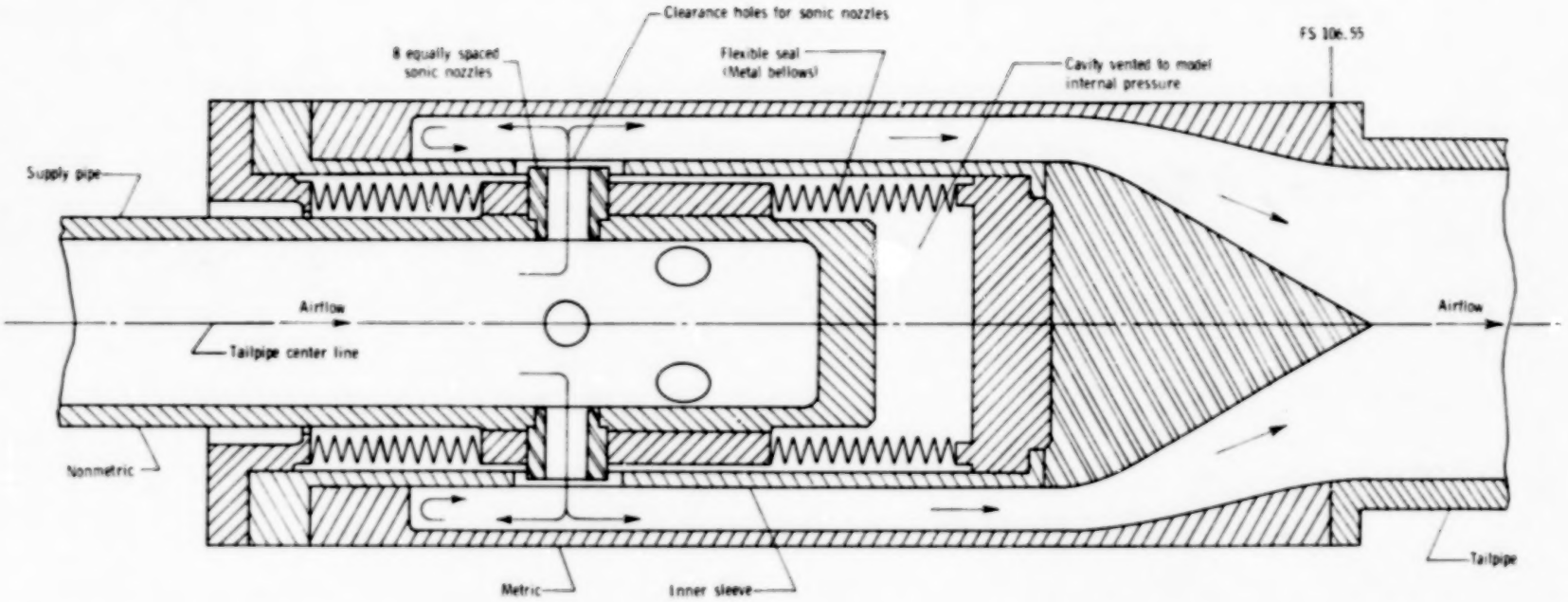
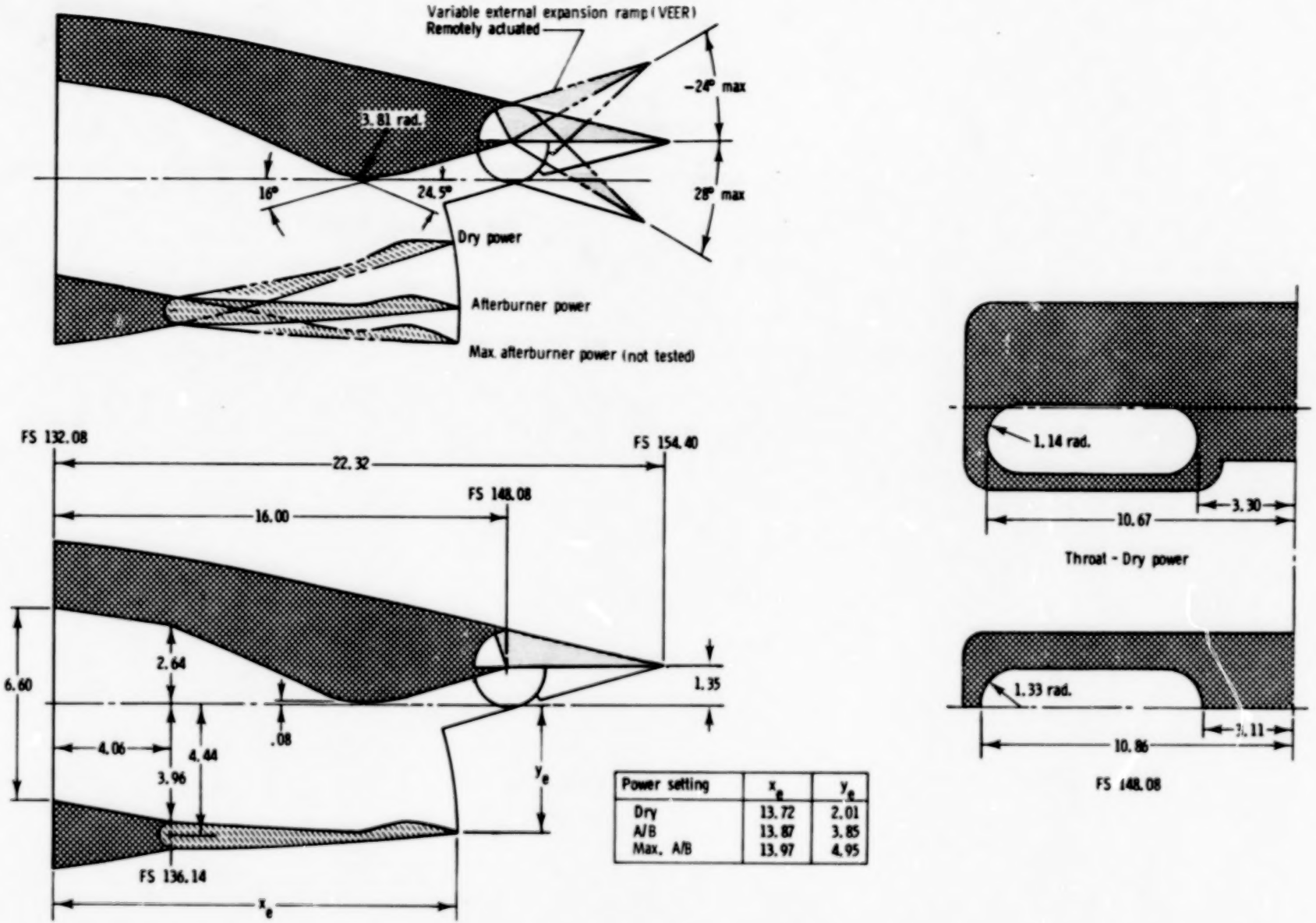
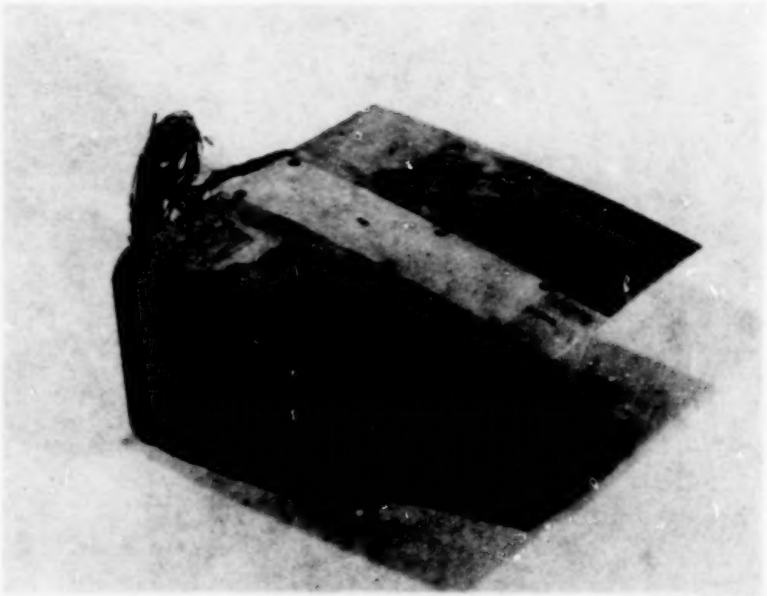


Figure 5.- Details of bellows arrangement used to transfer air from the nonmetric to metric portions of the model.



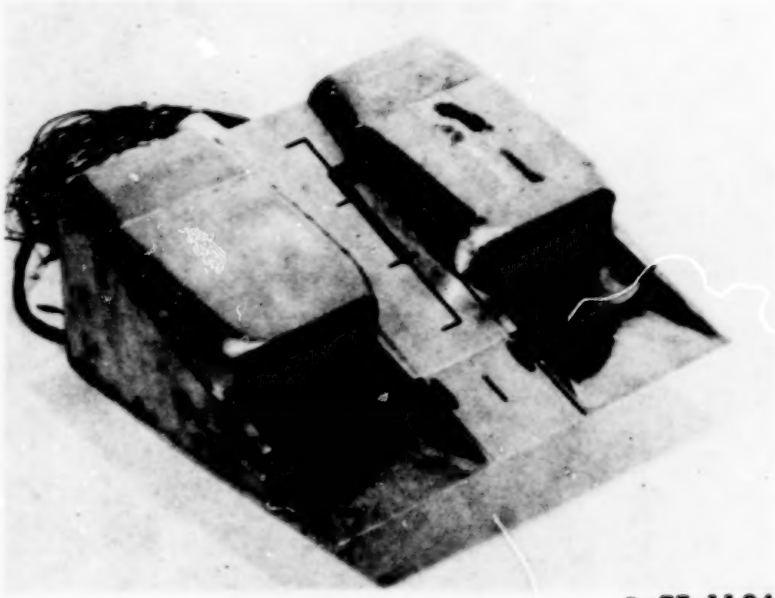
Power setting	x_e	y_e
Dry	13.72	2.01
A/B	13.87	3.85
Max. A/B	13.97	4.95

Figure 6.- Details of the single expansion ramp nozzle (SERN) (maximum vectoring range indicated). All dimensions are in centimeters unless otherwise noted.



L-77-1120

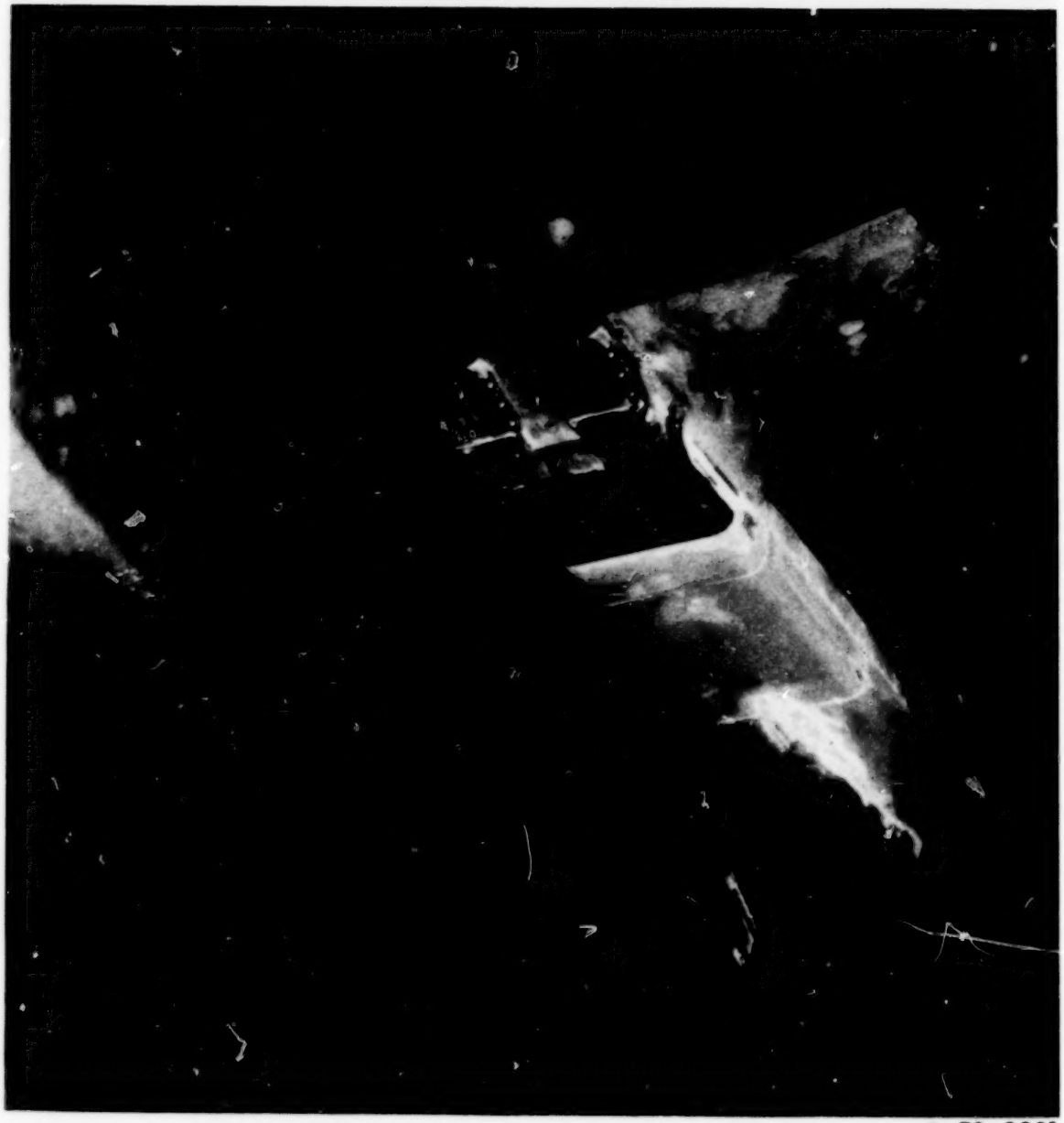
(a) Nozzle upright.



L-77-1124

(b) Nozzle inverted.

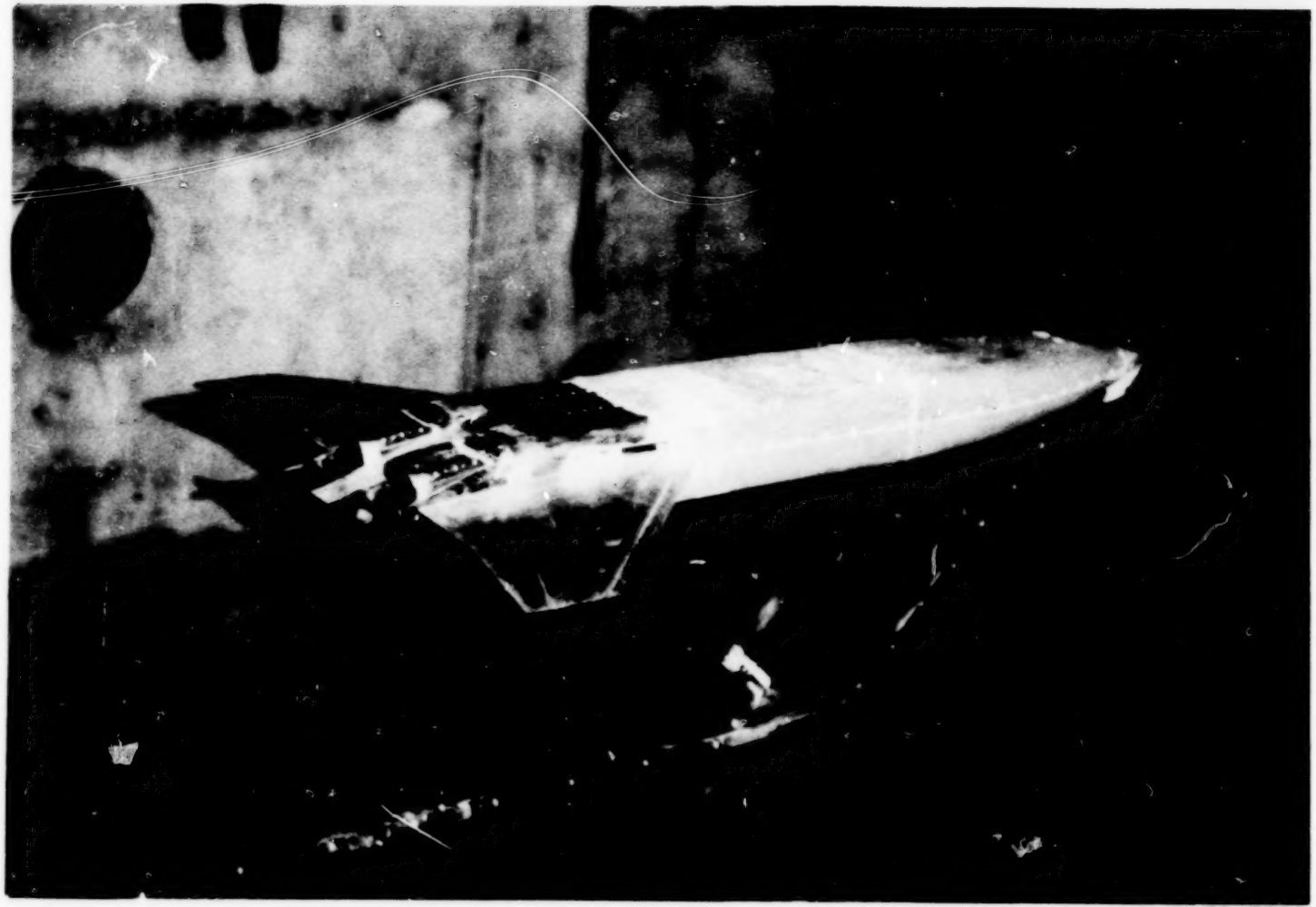
Figure 7.- Photographs of the single expansion ramp nozzle.



L-79-3201

(a) Bottom view; nozzle upright.

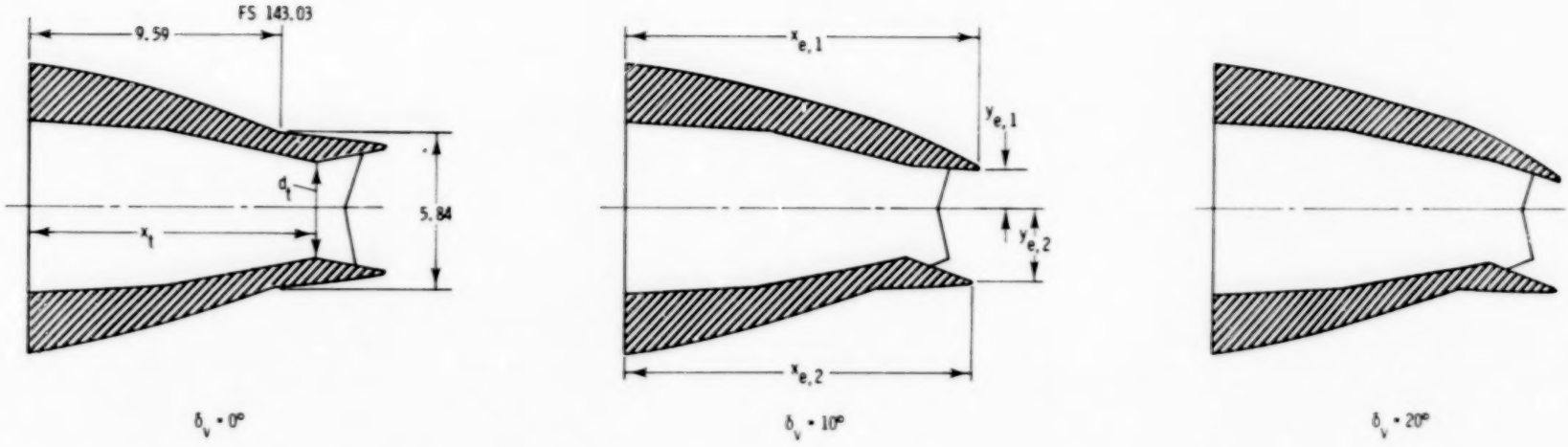
Figure 8.- Photograph showing installation of SERN with aft-swept wing.

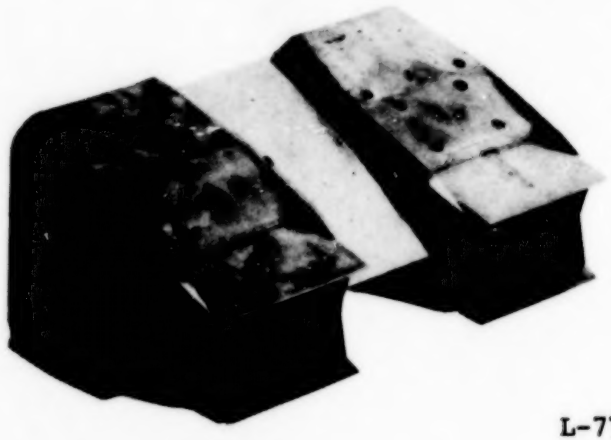


L-79-7035

(b) Three-quarter rear view; nozzle inverted.

Figure 8.- Concluded.

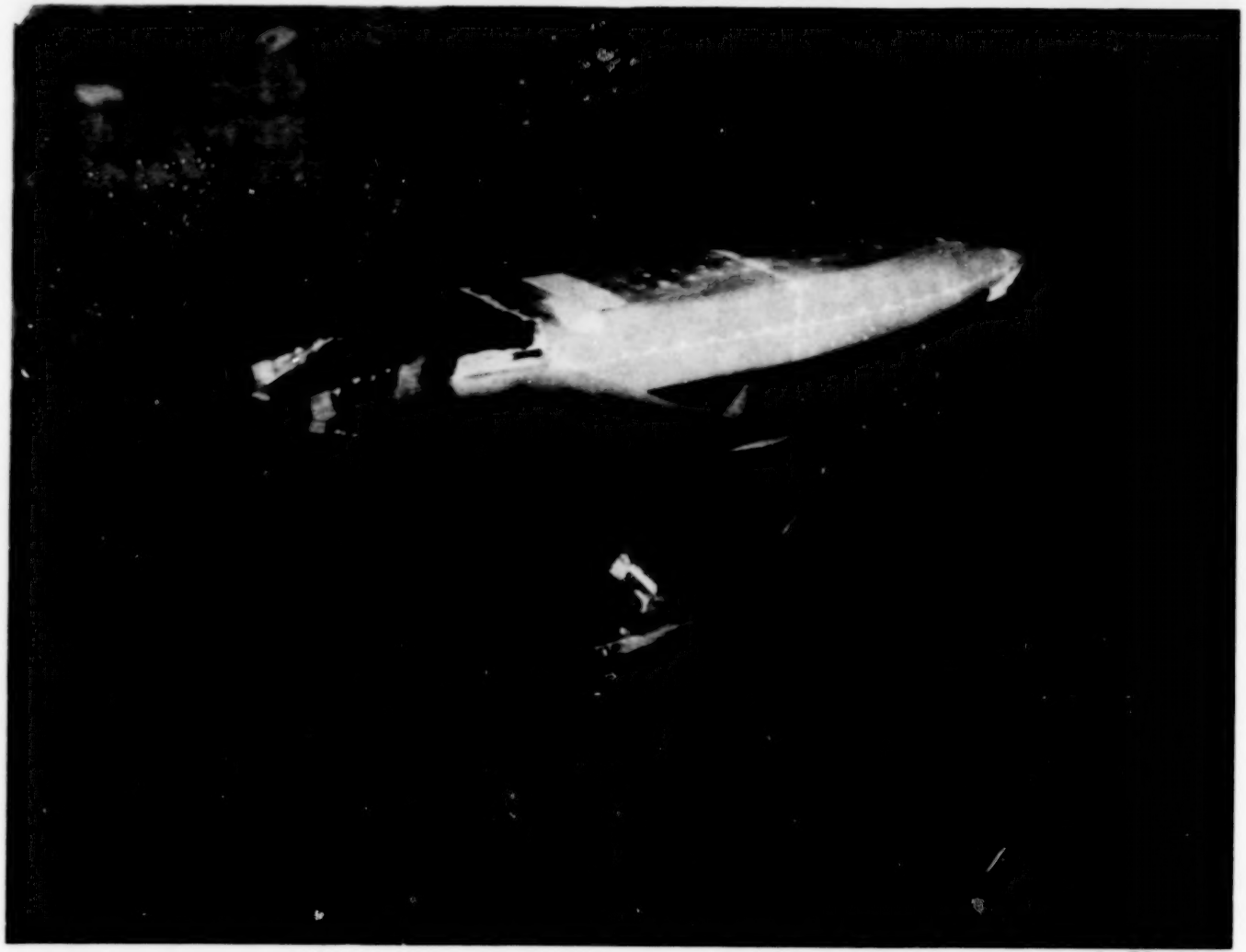




L-77-1123

δ_v, deg	x_t	d_t	$x_{e,1}$	$y_{e,1}$	$x_{e,2}$	$y_{e,2}$
0	10.94	3.84	13.86	2.35	13.86	-2.35
10	10.94	3.84	13.83	1.55	13.85	-2.62
20	10.94	3.84	13.80	1.05	13.69	-3.08

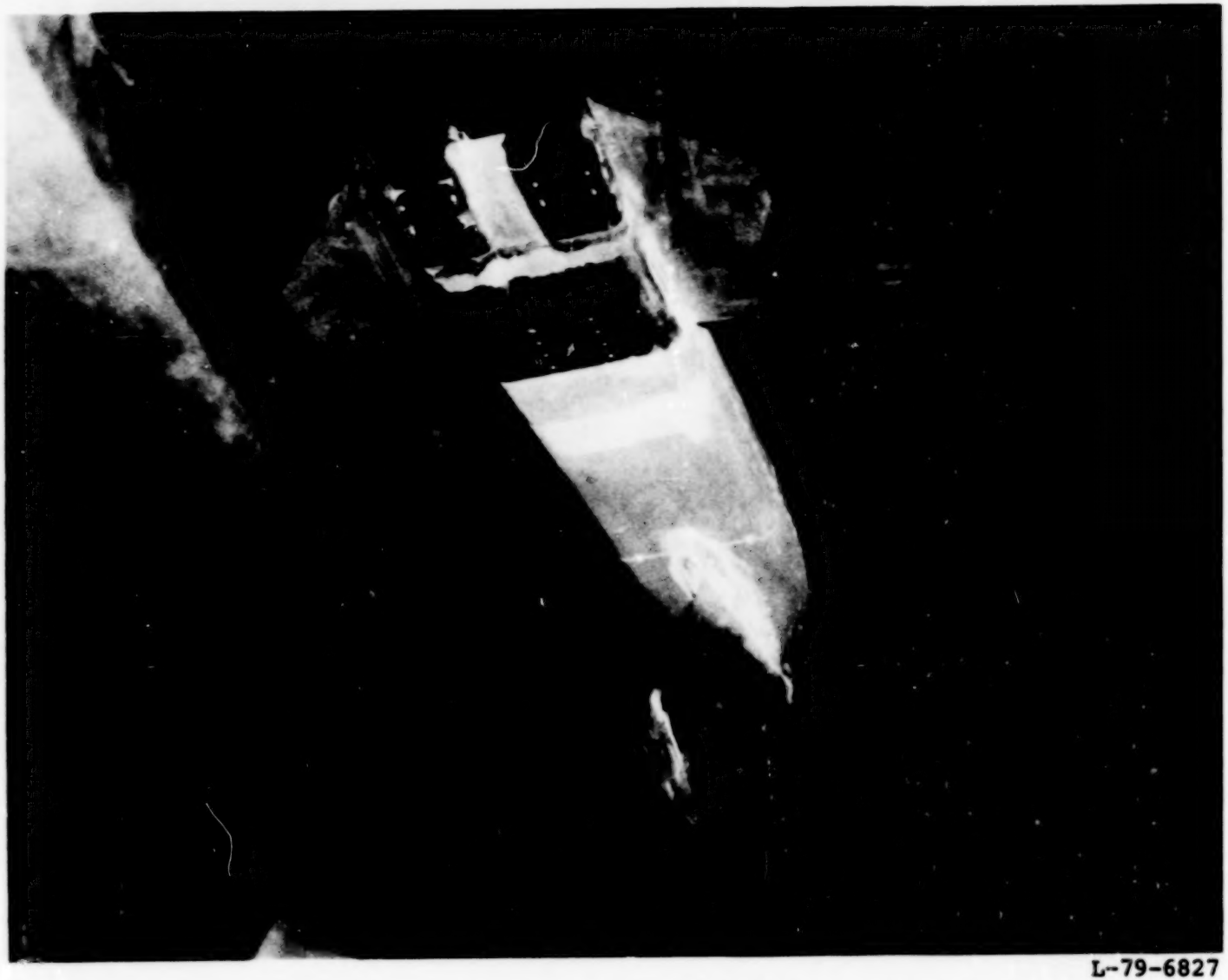
Figure 9.- Details and photograph of 2-D C-D nozzle, intermediate power. Nozzle has diverging sidewalls from FS 132.08 to FS 135.89; nozzle width from FS 135.89 to exit is 7.37 cm. All dimensions are in centimeters unless otherwise noted.



L-79-6826

(a) Three-quarter rear view; $\delta_v = 0^o$.

Figure 10.- Photograph showing installation of 2-D C-D nozzle with forward-swept wing.



L-79-6827

(b) Bottom view; $\delta_v = 10^o$.

Figure 10.- Concluded.

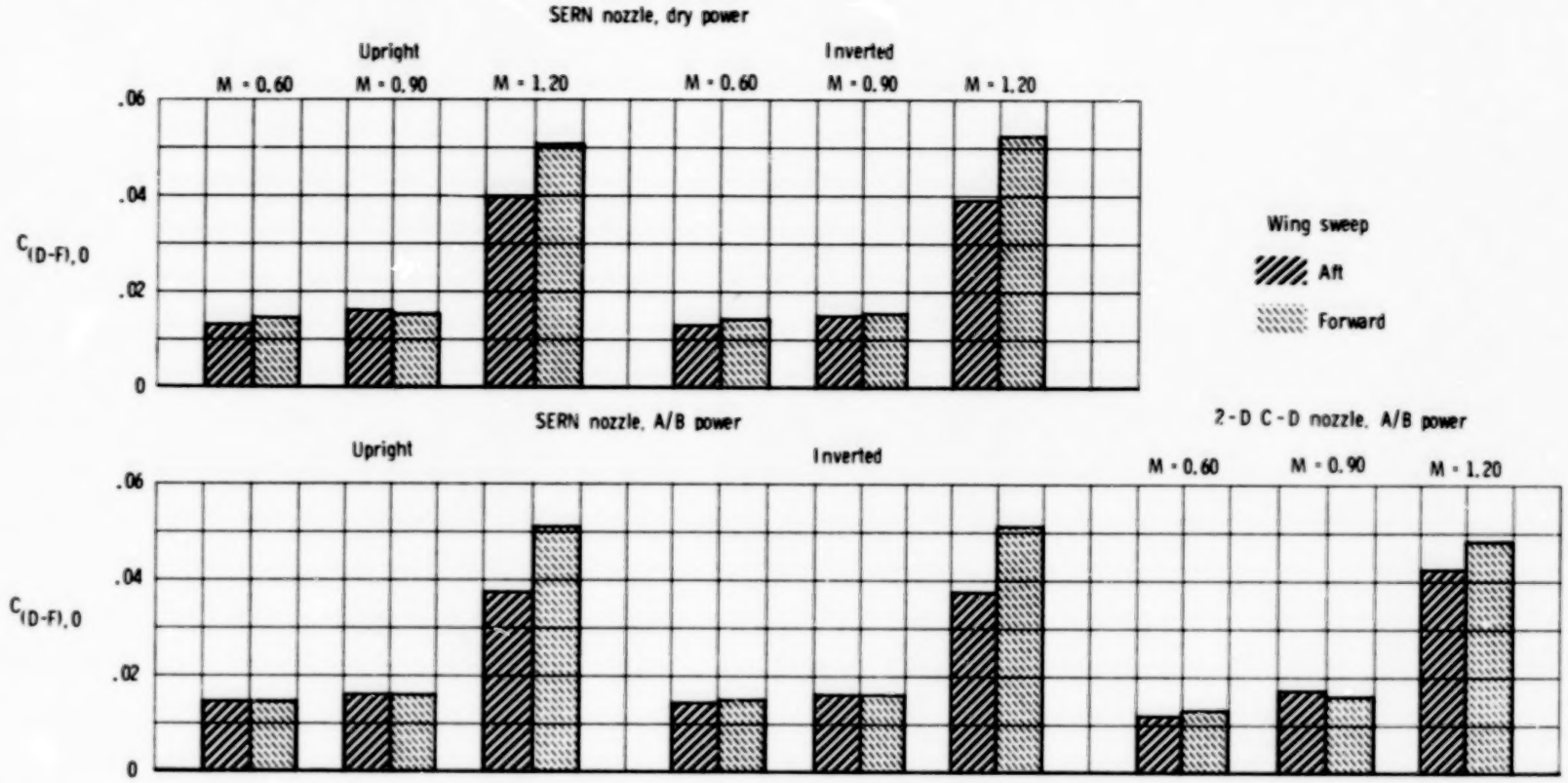


Figure 11.- Effect of wing sweep on $C_{(D-F)}$ at $C_L = 0$ for the nozzle configurations tested. $\delta_v = 0^o$; NPR = 1.0.

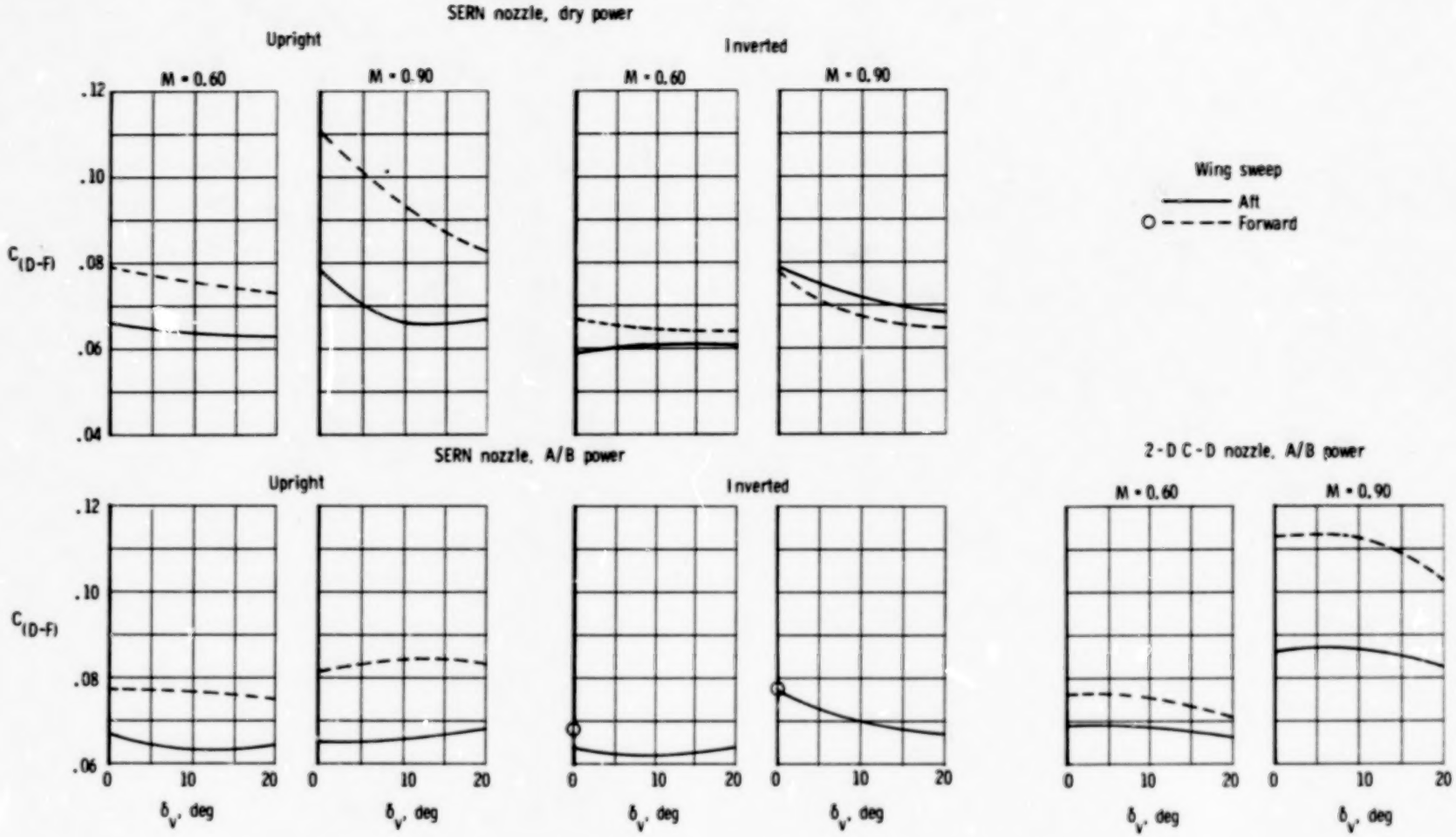


Figure 12.- Effect of wing sweep on $C_{(D-F)}$ at $C_L = 0.40$ for the nozzle configurations tested. NPR = 1.0. (Symbols represent interpolated data.)

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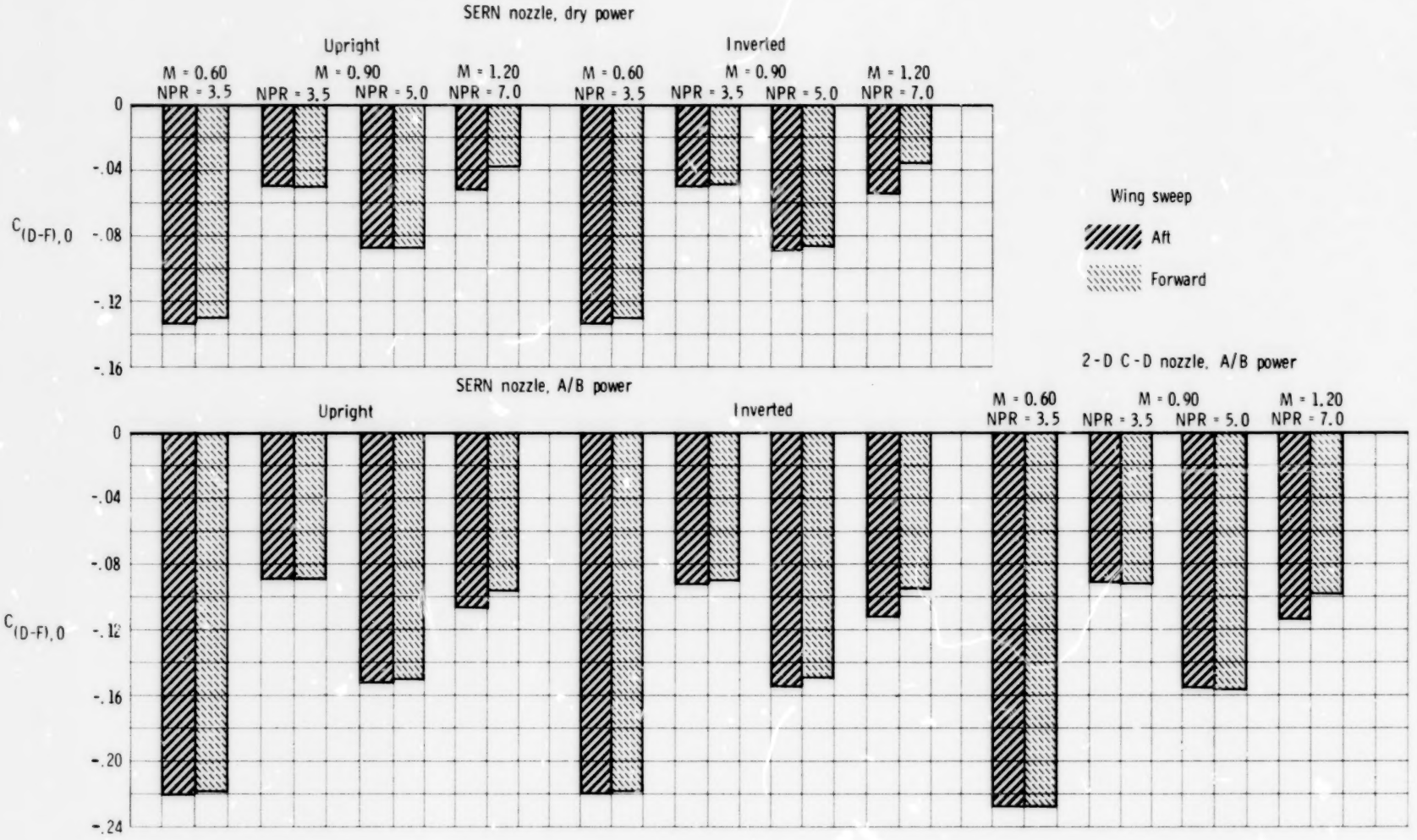
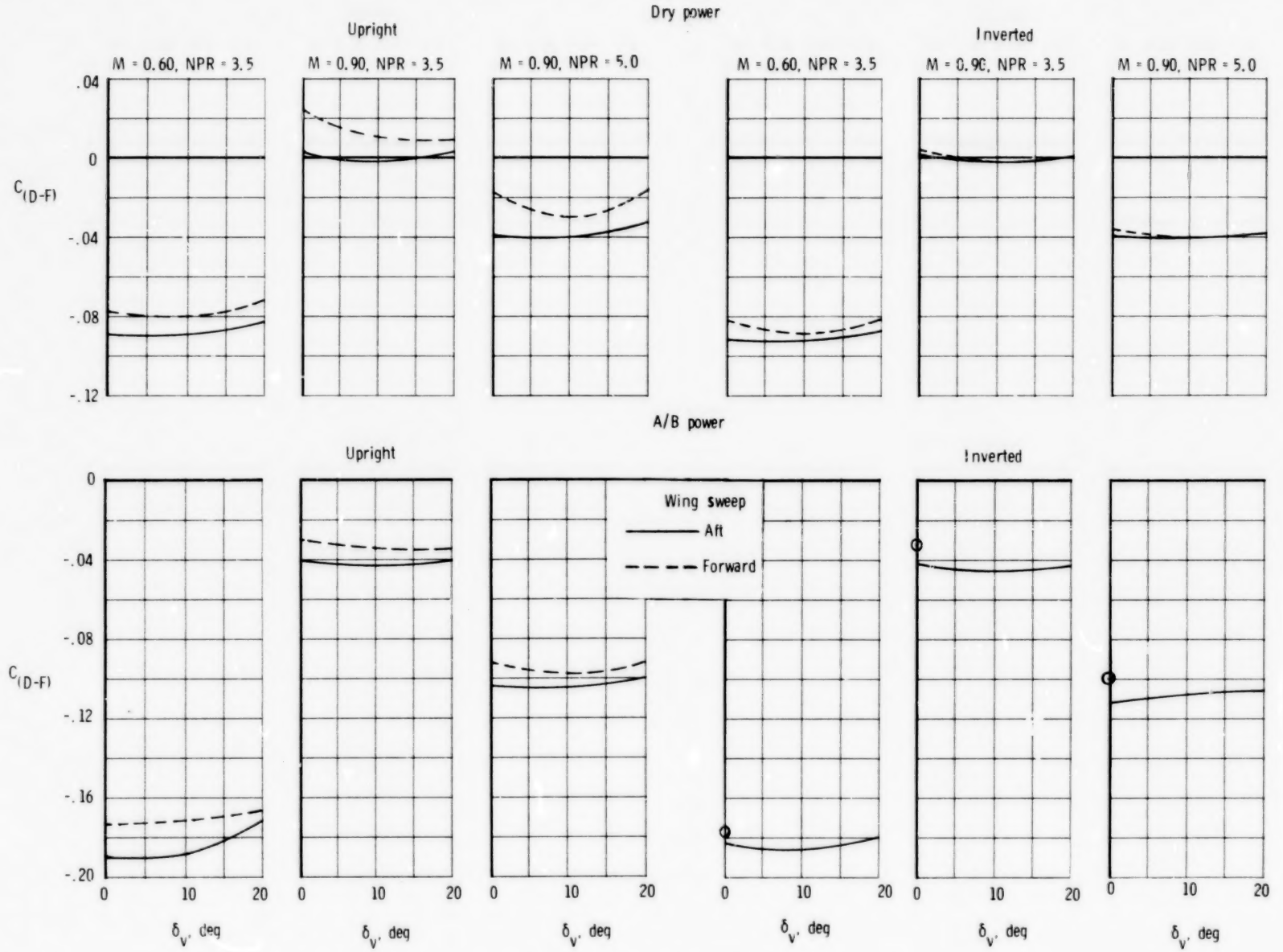
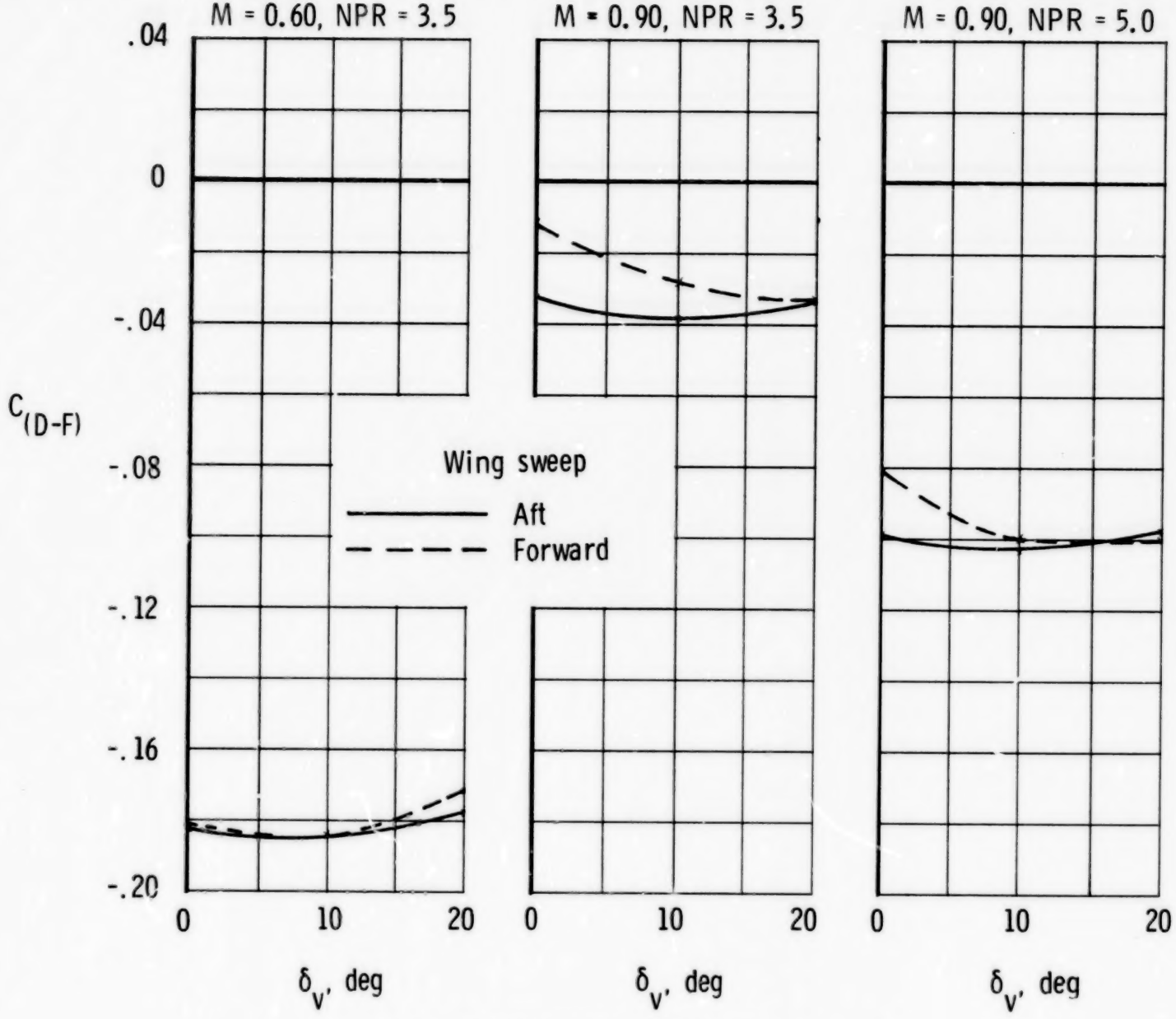


Figure 13.- Effect of wing sweep on $C_{(D-F)}$ at $C_L = 0$ for the nozzle configurations tested. $\delta_v = 0^o$.



(a) SERN (nozzle).

Figure 14.- Effect of wing sweep on $C_{(D-F)}$ at $C_L = 0.40$ for the nozzle configurations tested. (Symbols represent interpolated data.)



(b) 2-D C-D nozzle, A/B power.

Figure 14.- Concluded.

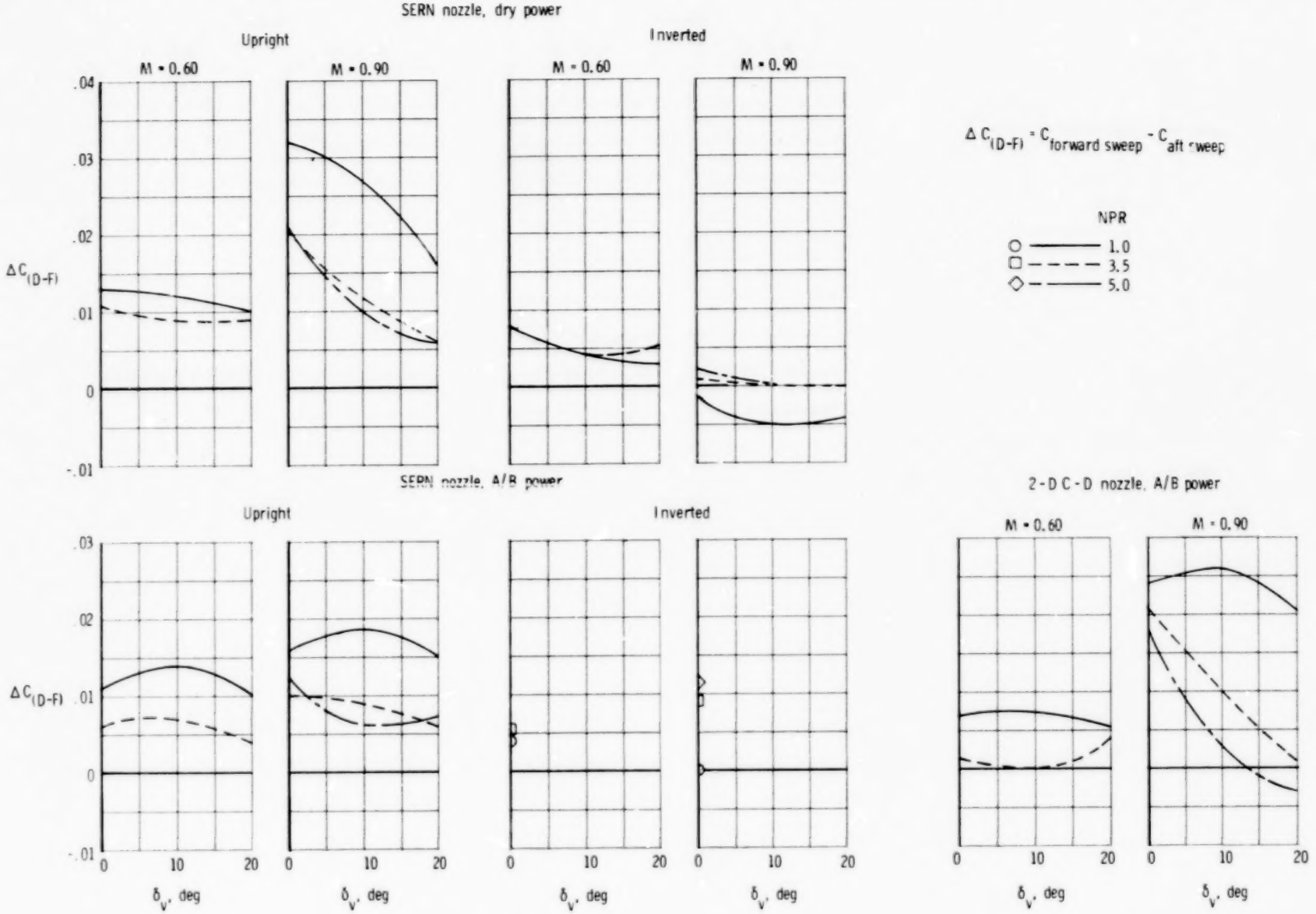
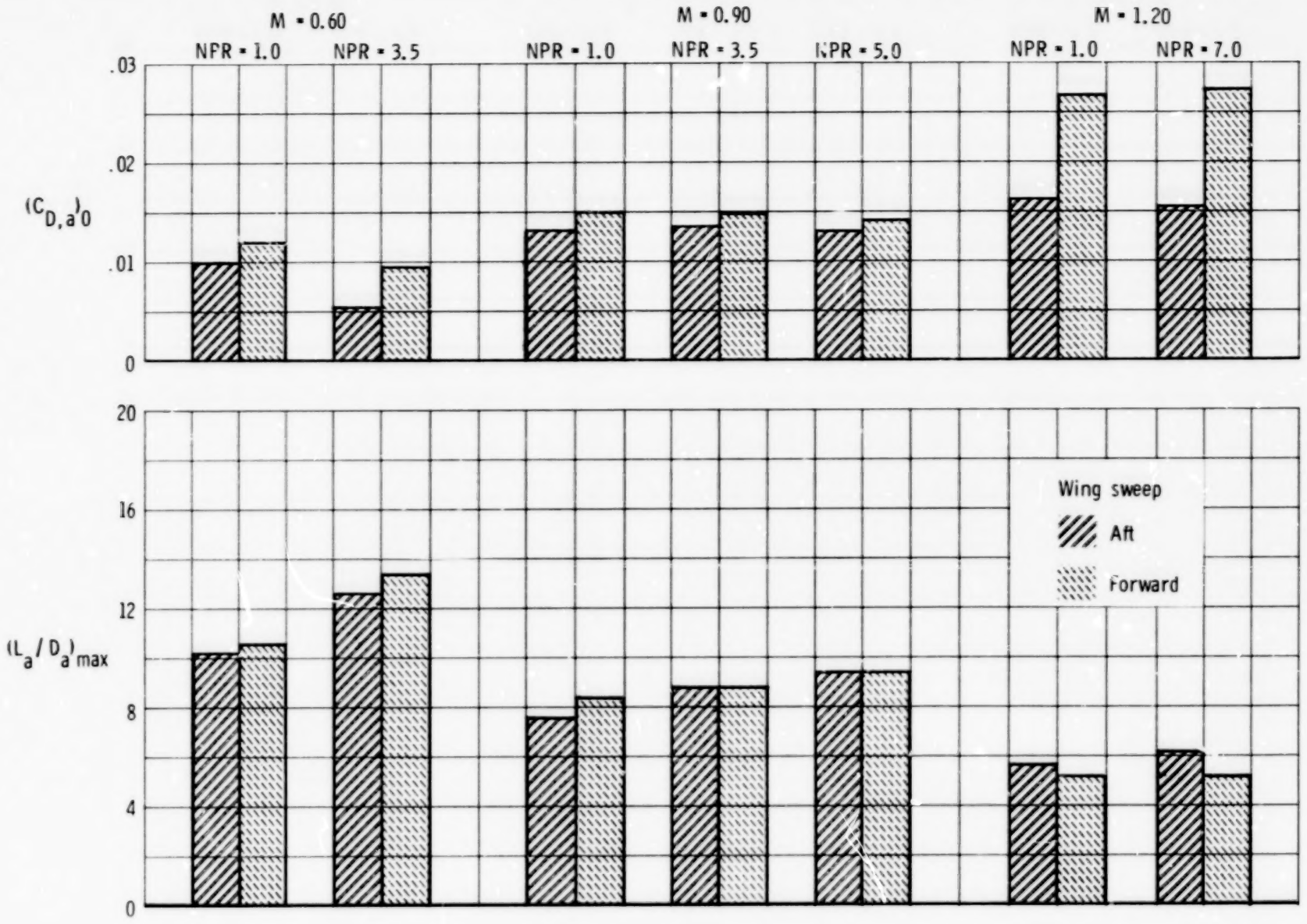
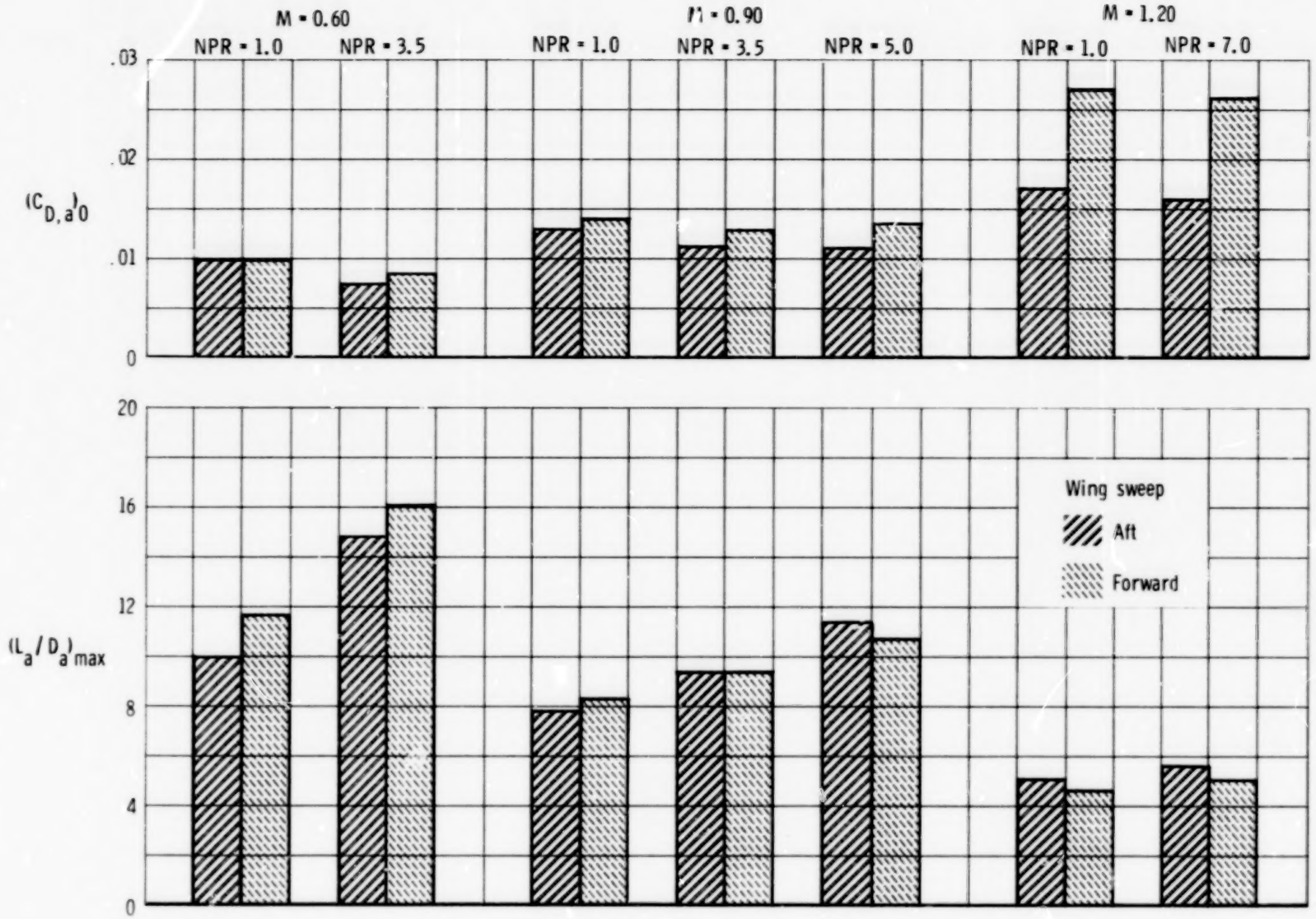


Figure 15.- Effect of wing sweep on $\Delta C_{(D-F)}$ at $C_L = 0.40$ for the nozzle configurations tested. (Symbols represent interpolated data.)



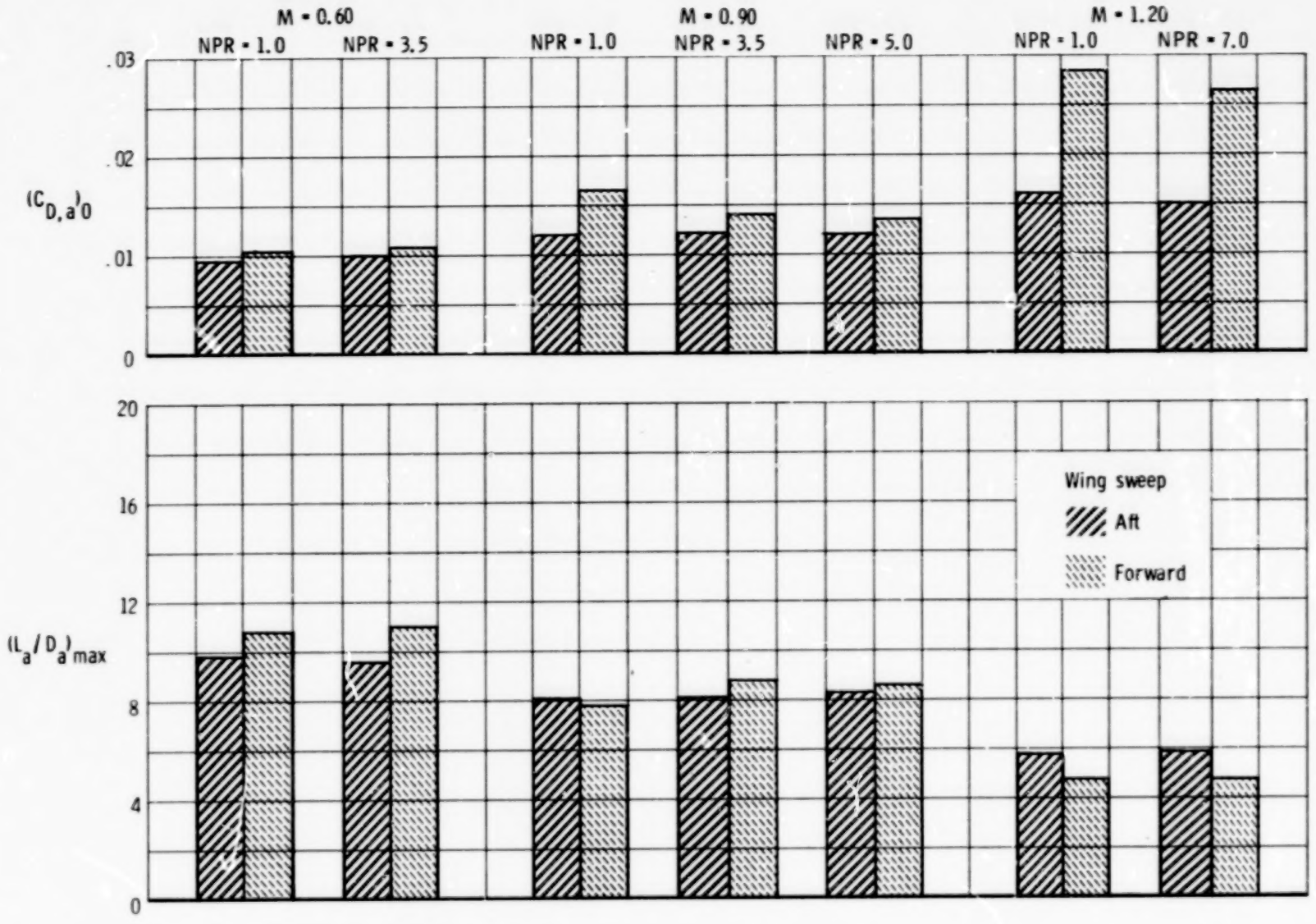
(a) Upright SERN, dry power.

Figure 16.- Effect of wing sweep on $(C_{D,a})_0$ and $(L_a/D_a)_{max}$. $\delta_v = 0^o$.



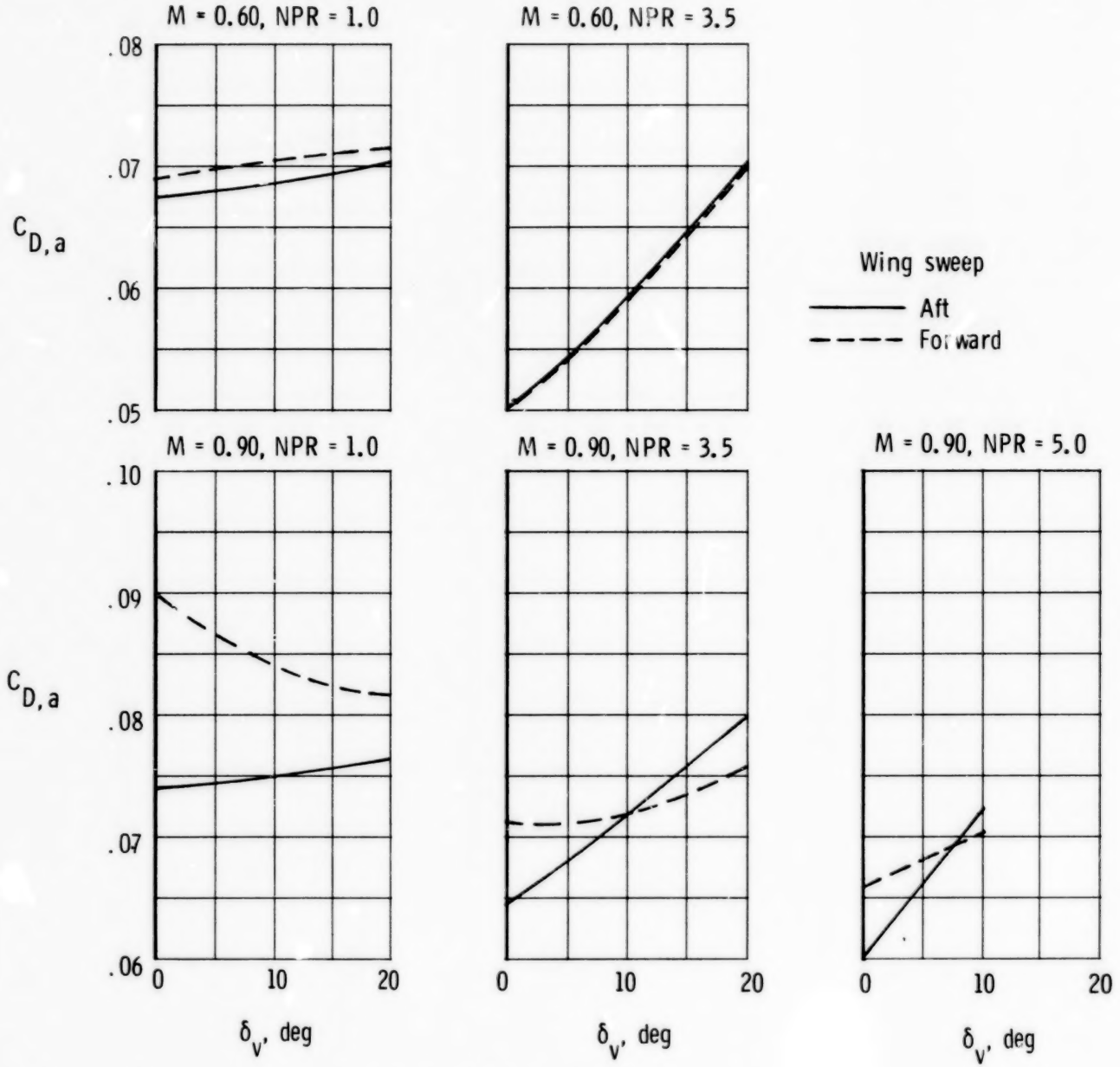
(b) Upright SERN, A/B power.

Figure 16.- Continued.



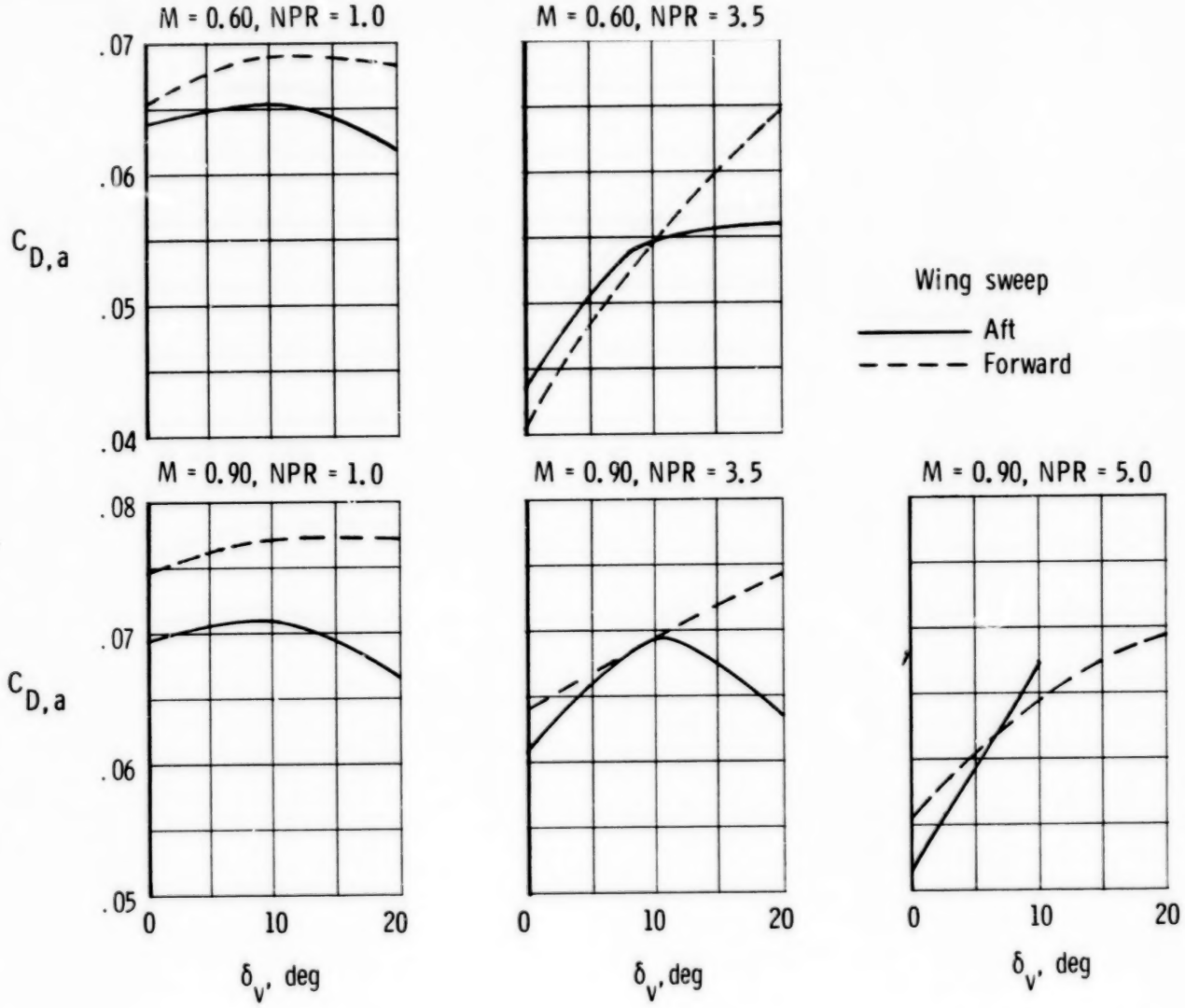
(c) 2-D C-D nozzle, A/B power.

Figure 16.- Concluded.



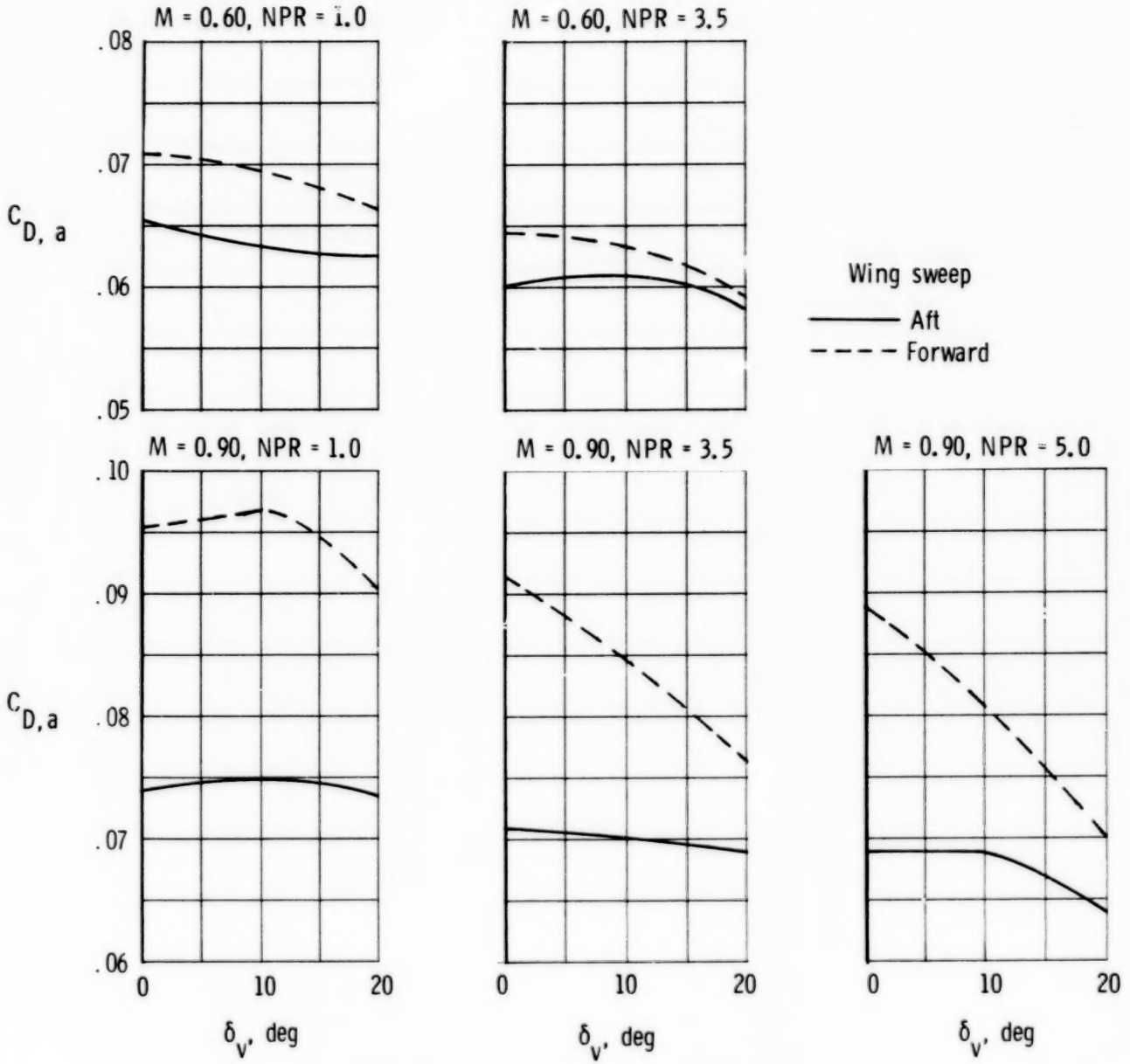
(a) Upright SERN, dry power.

Figure 17.- Effect of wing sweep on $C_{D,a}$ at $C_{L,a} = 0.40$.



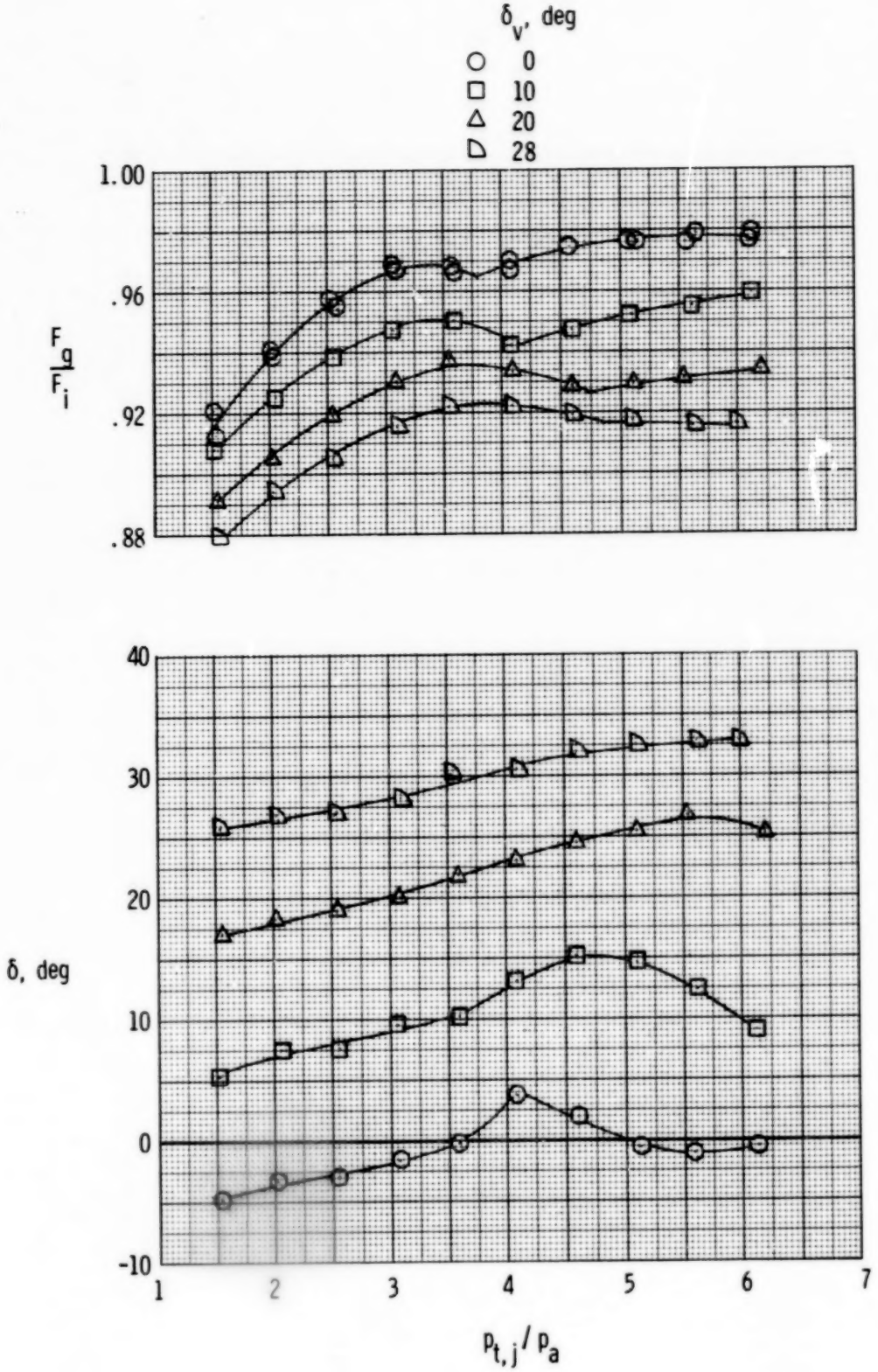
(b) Upright SERN, A/B power.

Figure 17.- Continued.



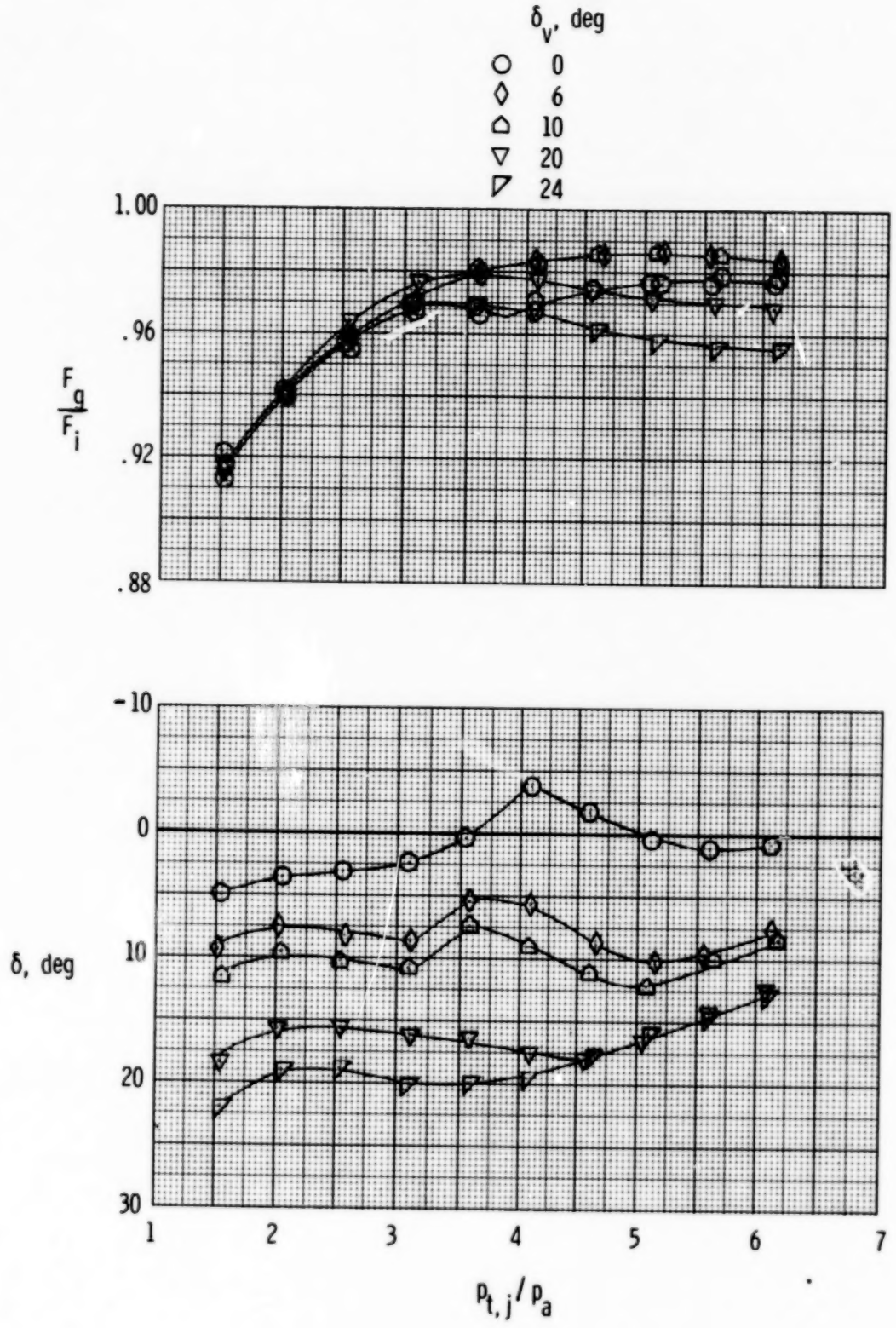
(c) 2-D C-D nozzle, A/B power.

Figure 17.- Concluded.



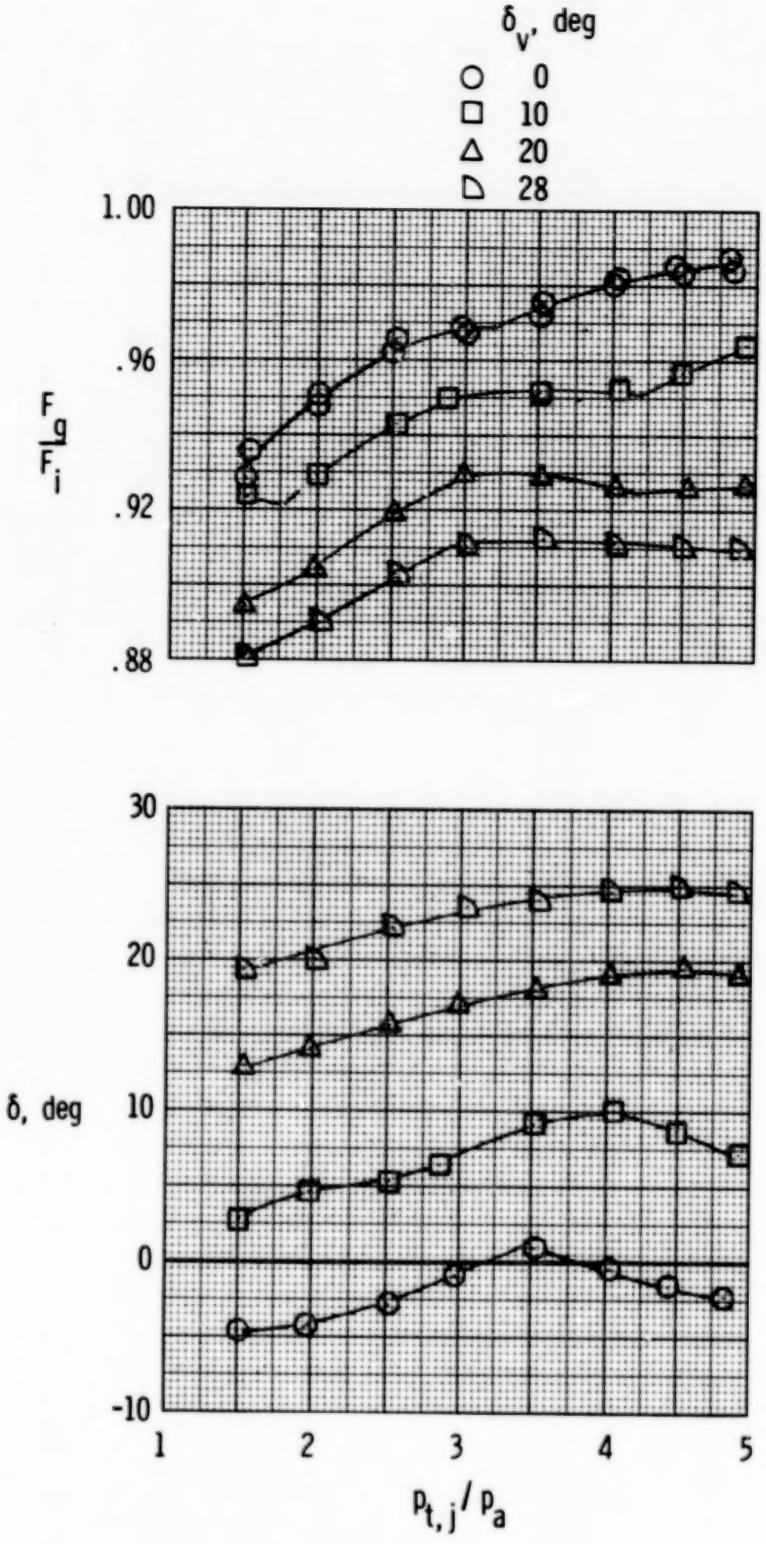
(a) Upright SERN.

Figure 18.- Static vectoring performance characteristics for the SERN, dry power (ref. 5).



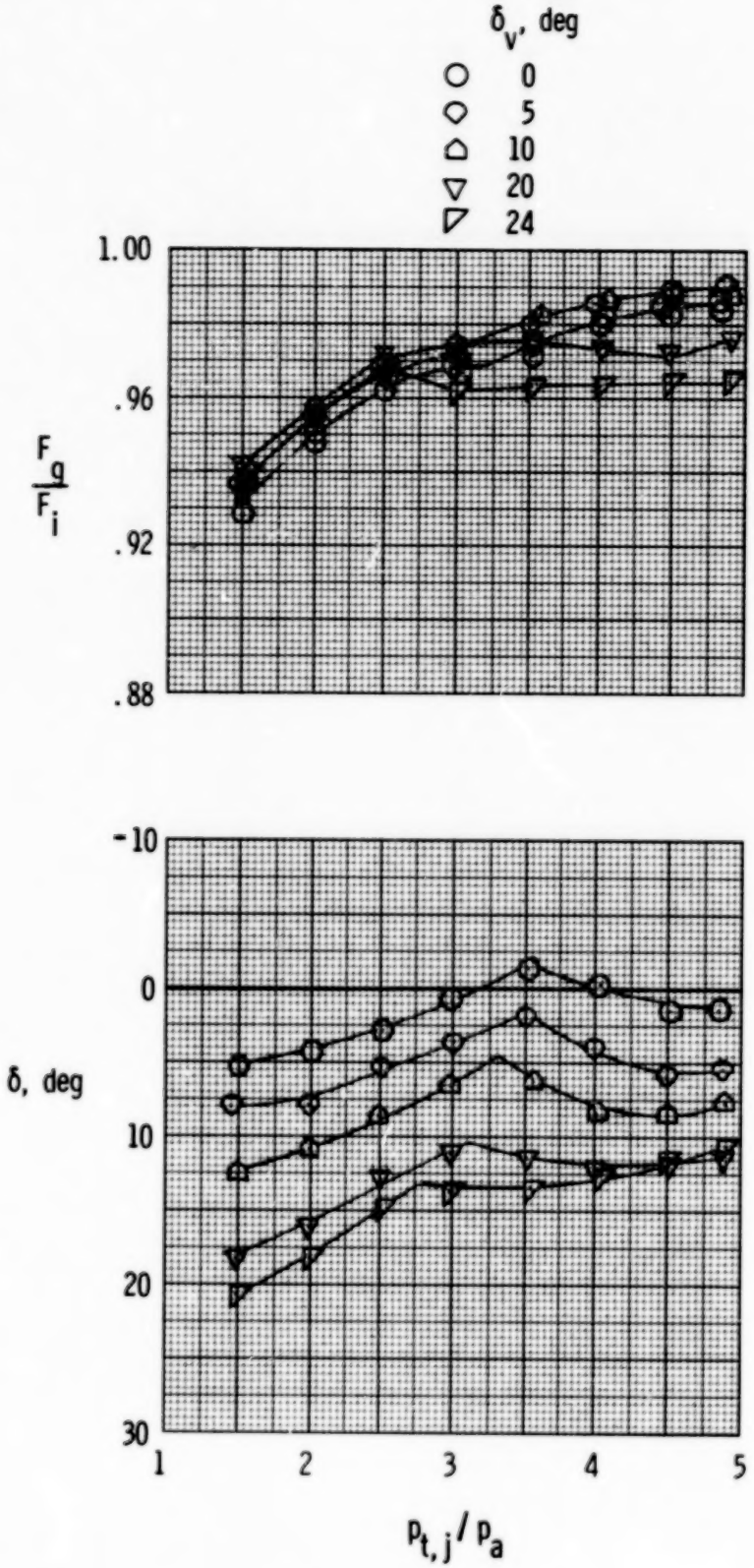
(b) Inverted SERN.

Figure 18.- Concluded.



(a) Upright SERN.

Figure 19.- Static vectoring performance characteristics for the SERN, A/B power (ref. 5).



(b) Inverted SERN.

Figure 19.- Concluded.

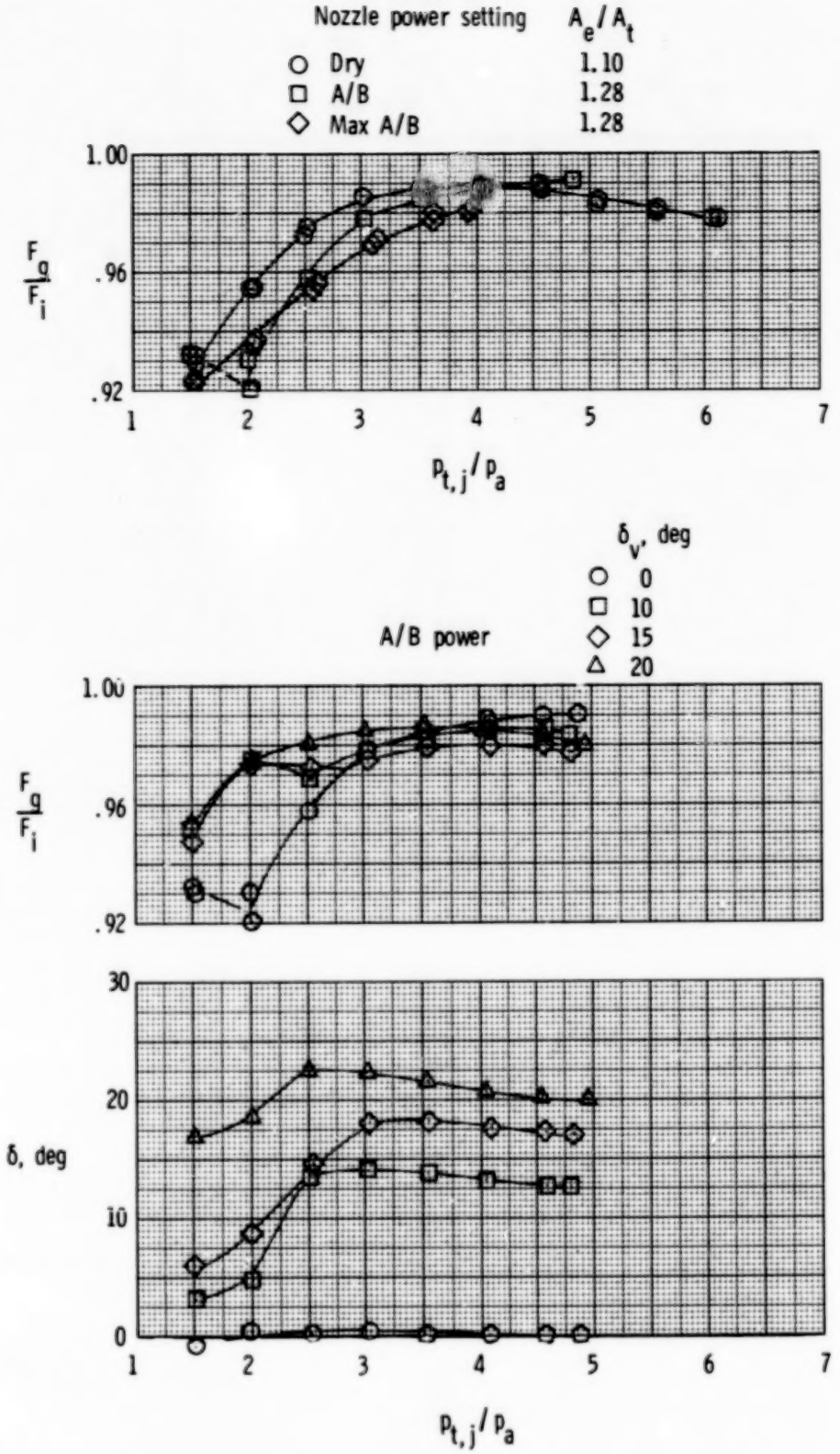


Figure 20.- Static performance and vectoring characteristics for the 2-D C-D nozzle, A/B power (ref. 5).

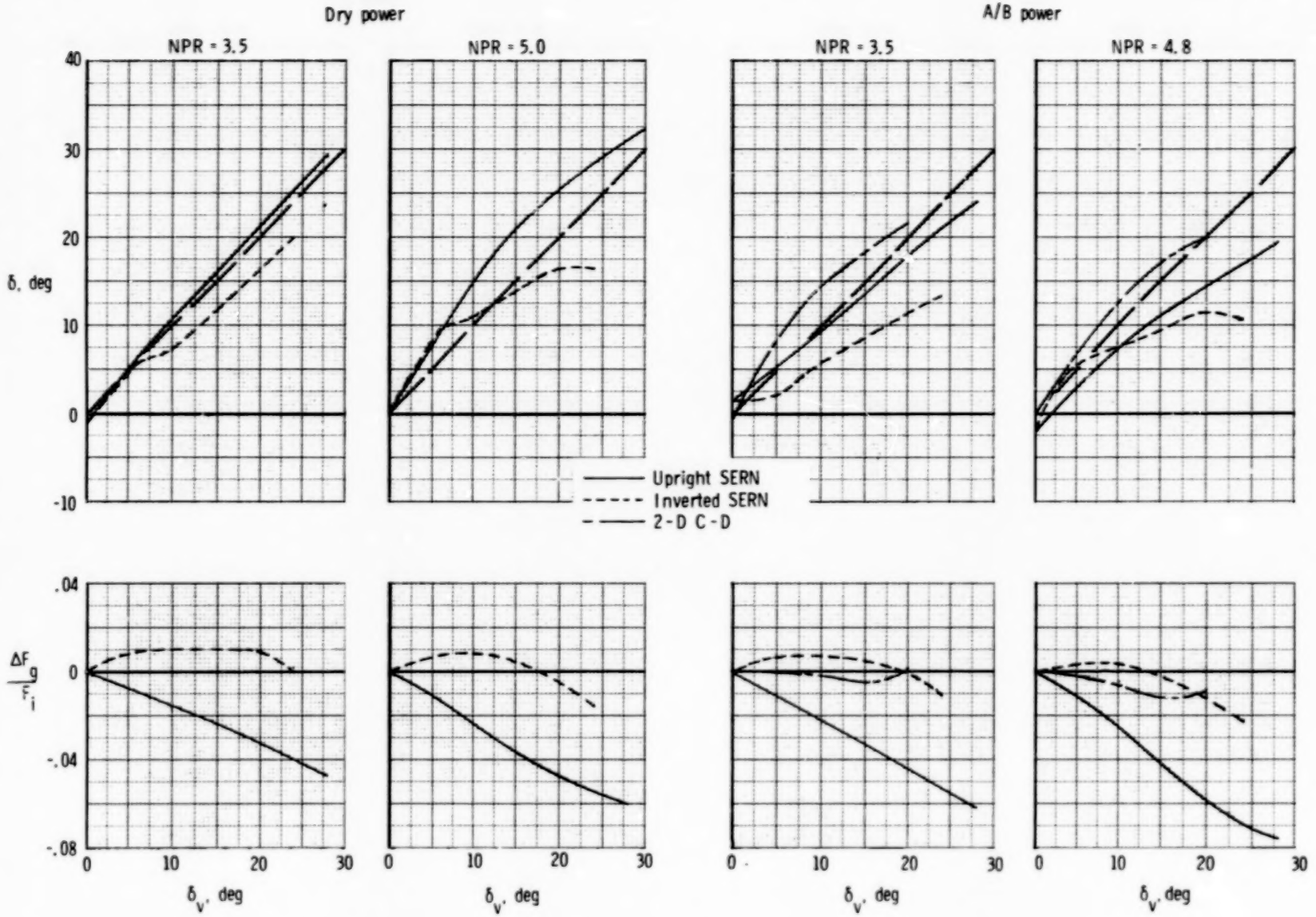


Figure 21.- Summary of nozzle static turning and vectoring performance. Characteristics are at constant pressure ratio (ref. 5).

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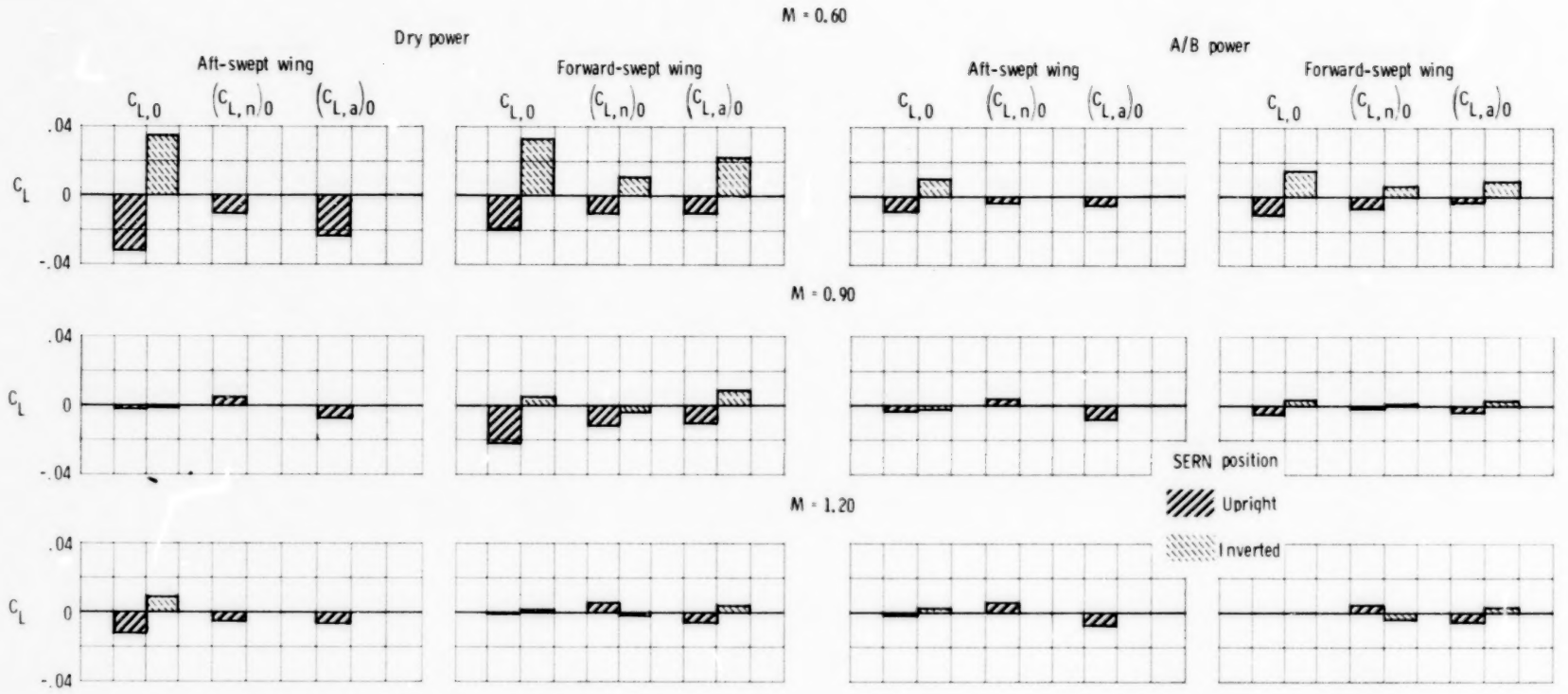


Figure 22.- Effect of nozzle position on various zero-lift parameters. $\delta_v = 0^o$; NPR = 1.0.

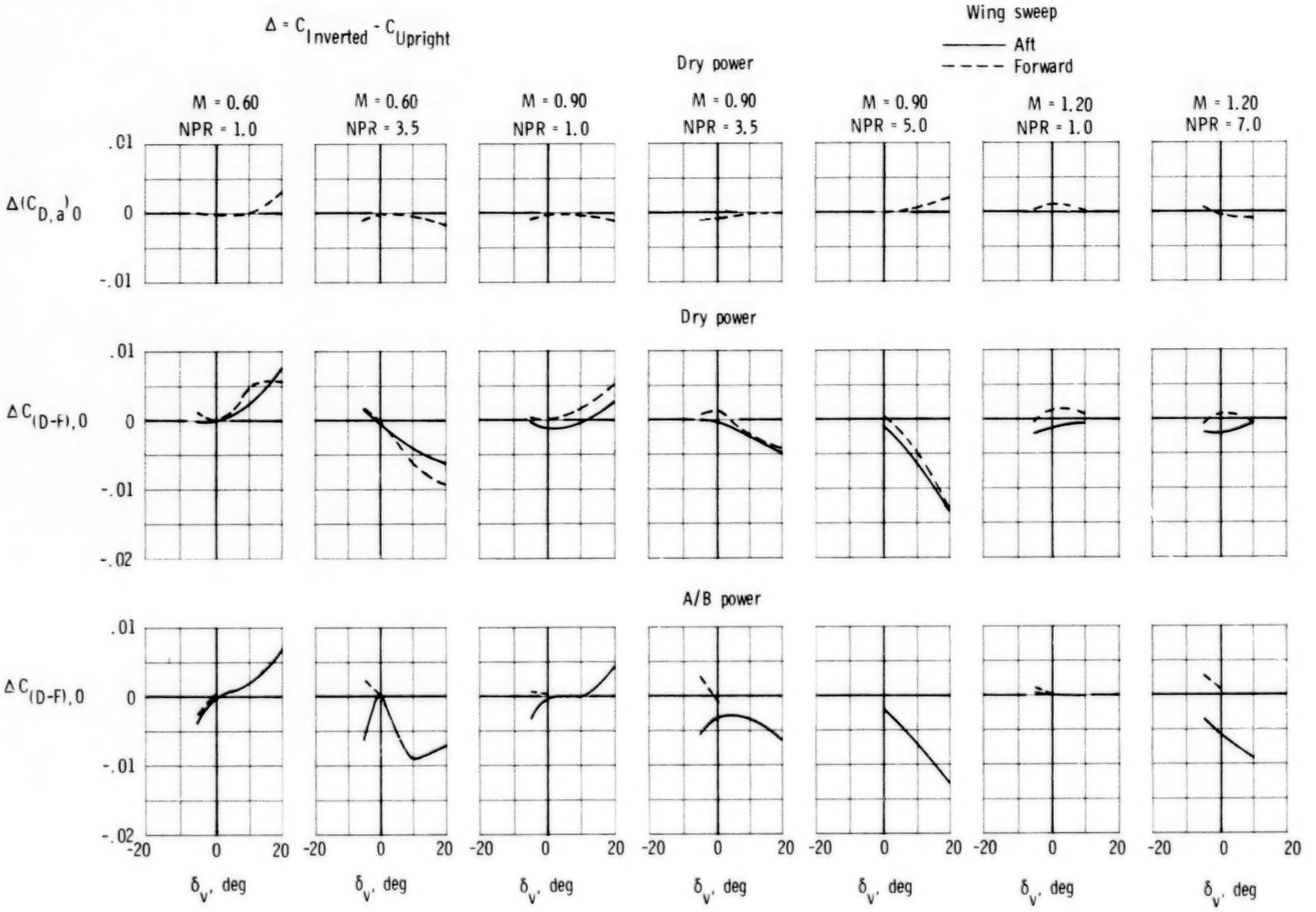


Figure 23.- Effect of nozzle position on $\Delta(C_{D,a})_0$ and $\Delta C_{(D-F),0}$ for the SERN.

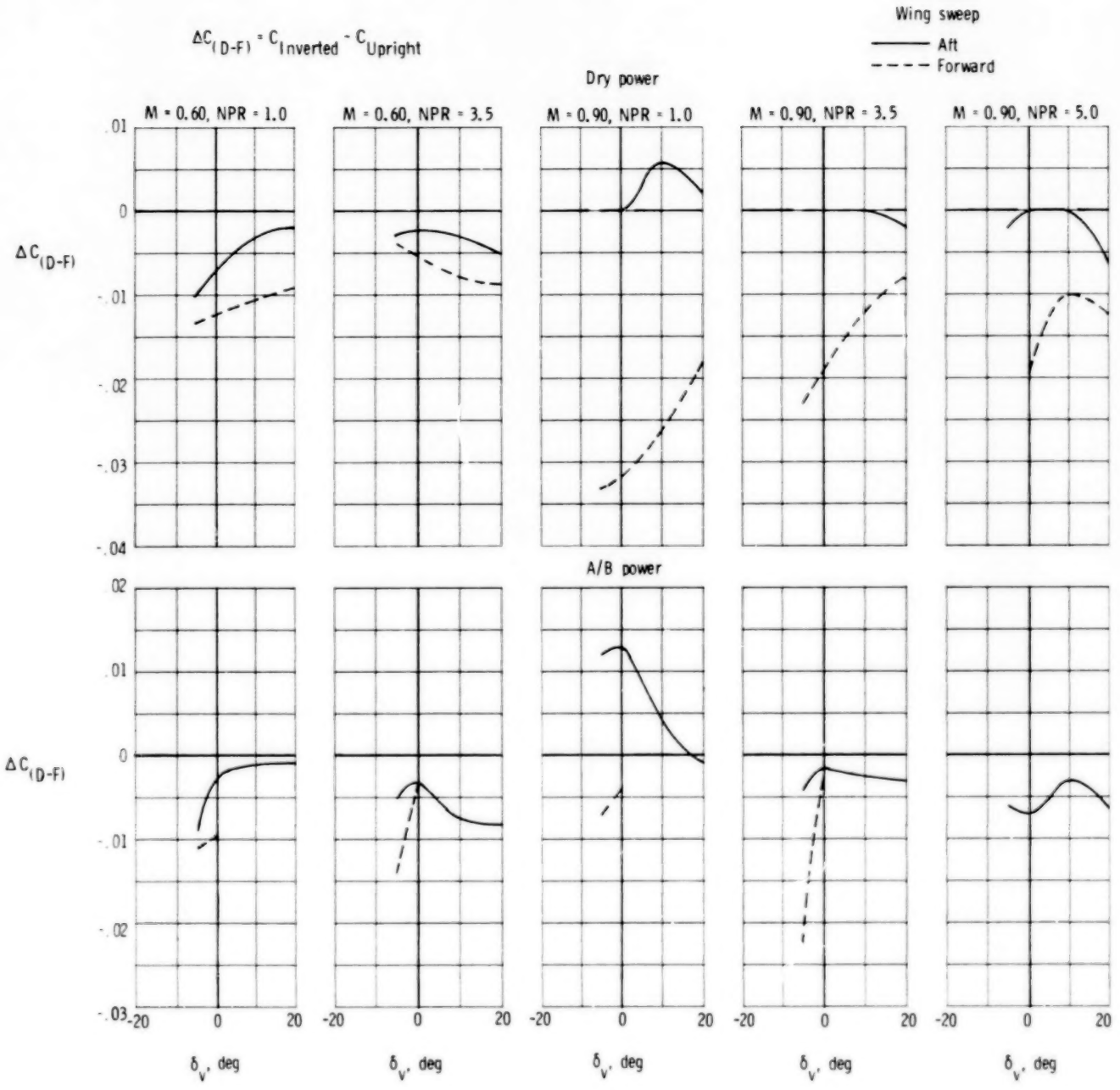
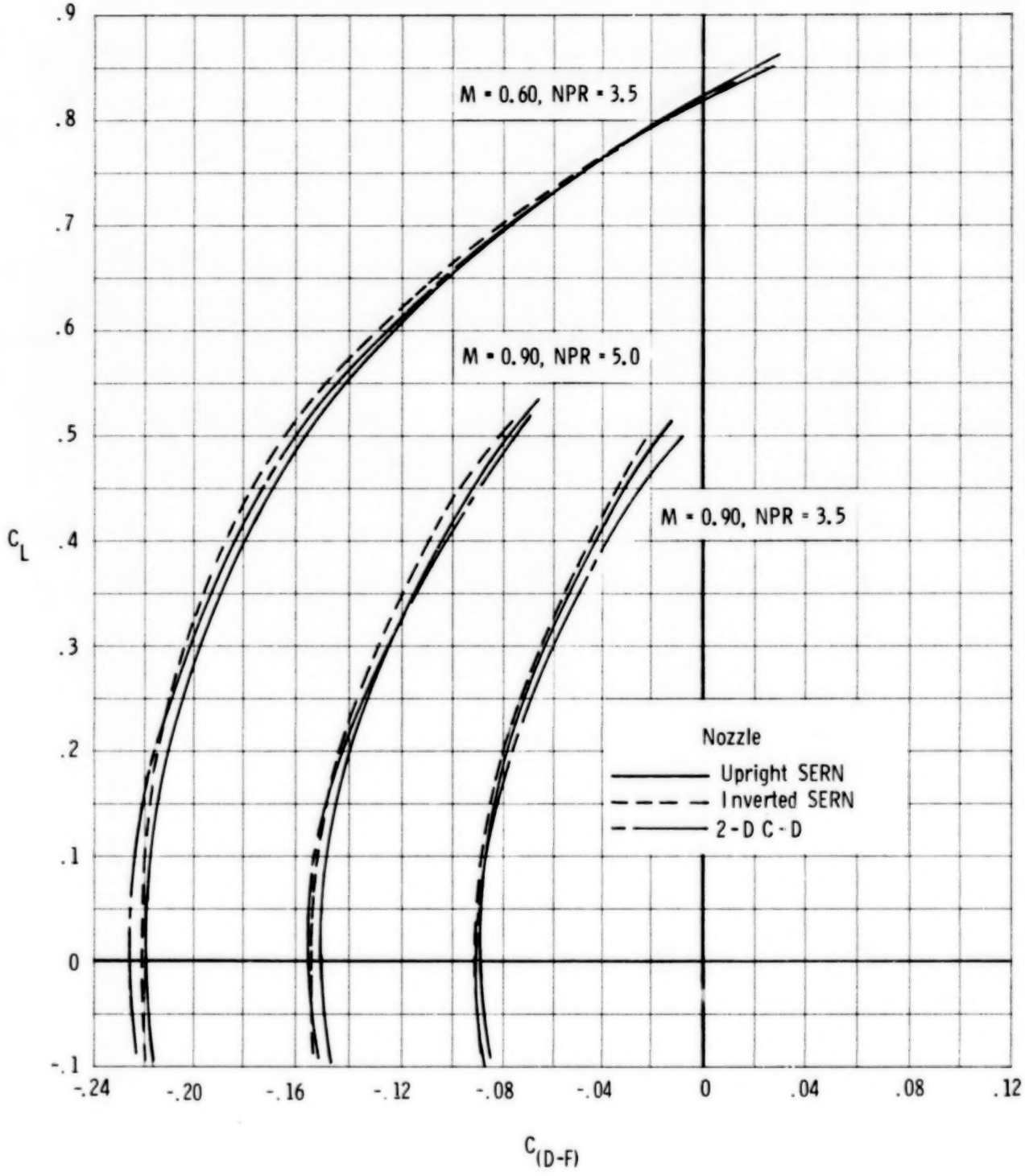
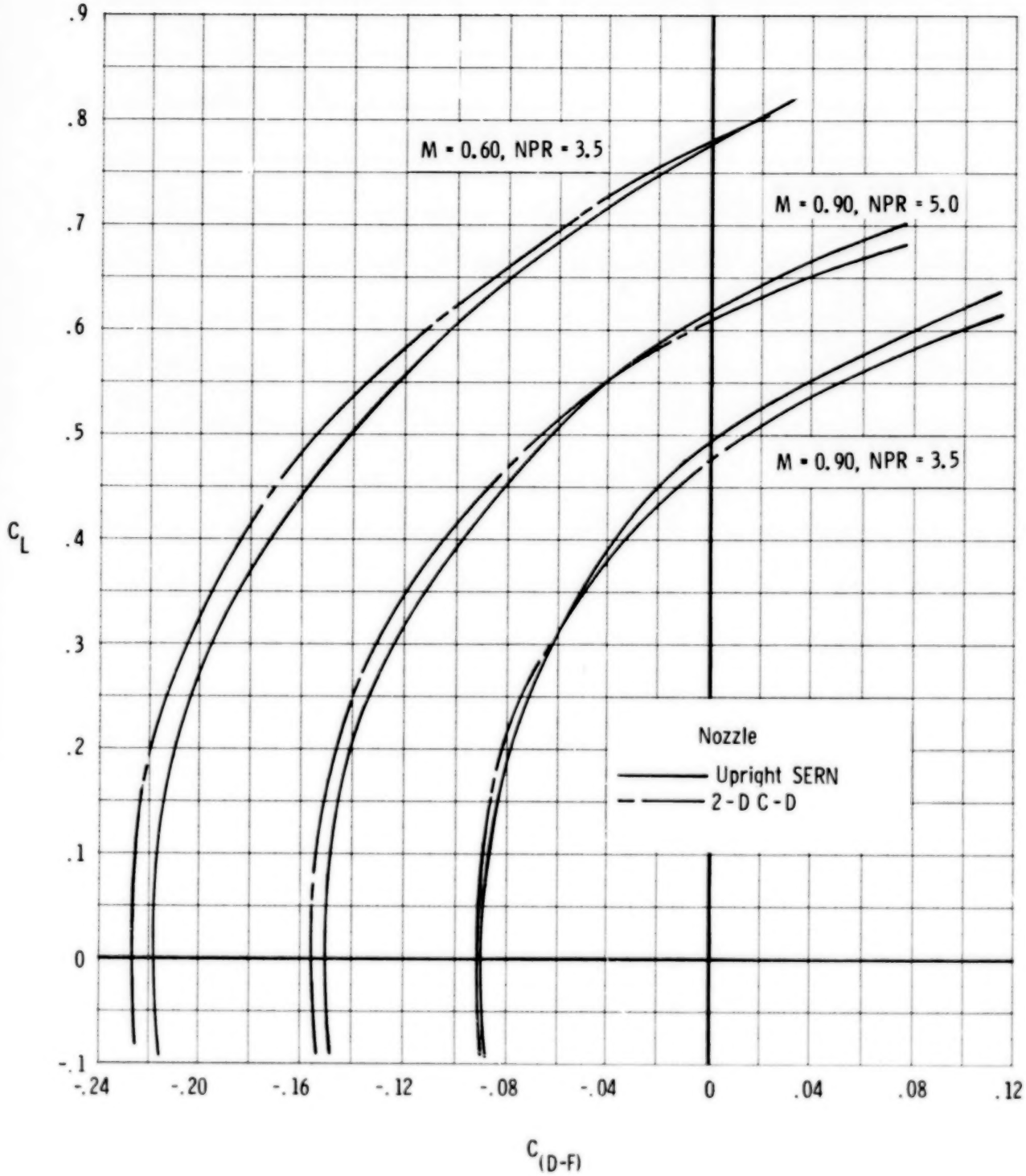


Figure 24.- Effect of nozzle position and wing sweep on $\Delta C_{(D-F)}$ at $C_L = 0.40$.



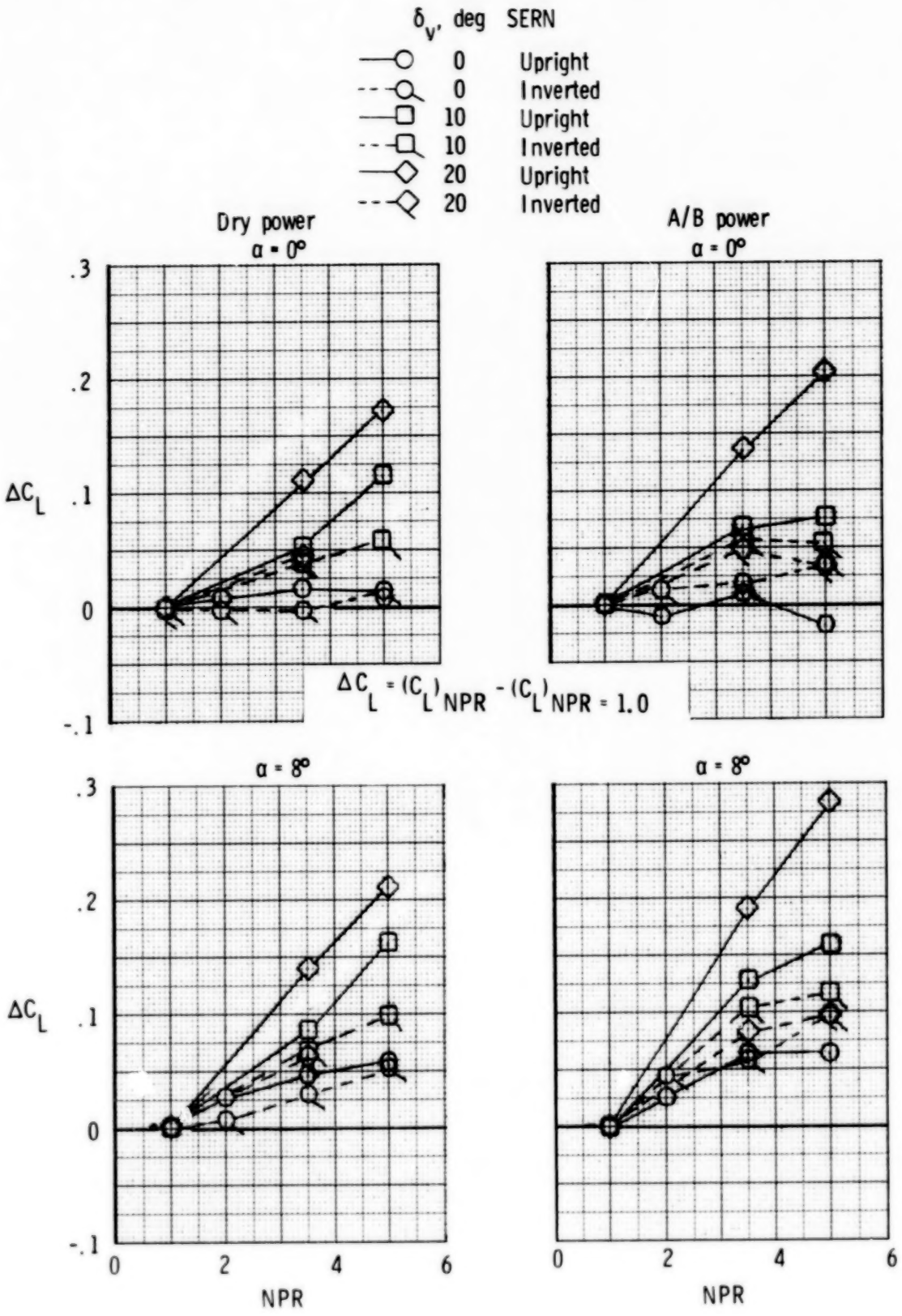
(a) Aft-swept wing.

Figure 25.- Envelopes of vectored drag-minus-thrust polars for various nozzle configurations, A/B power.



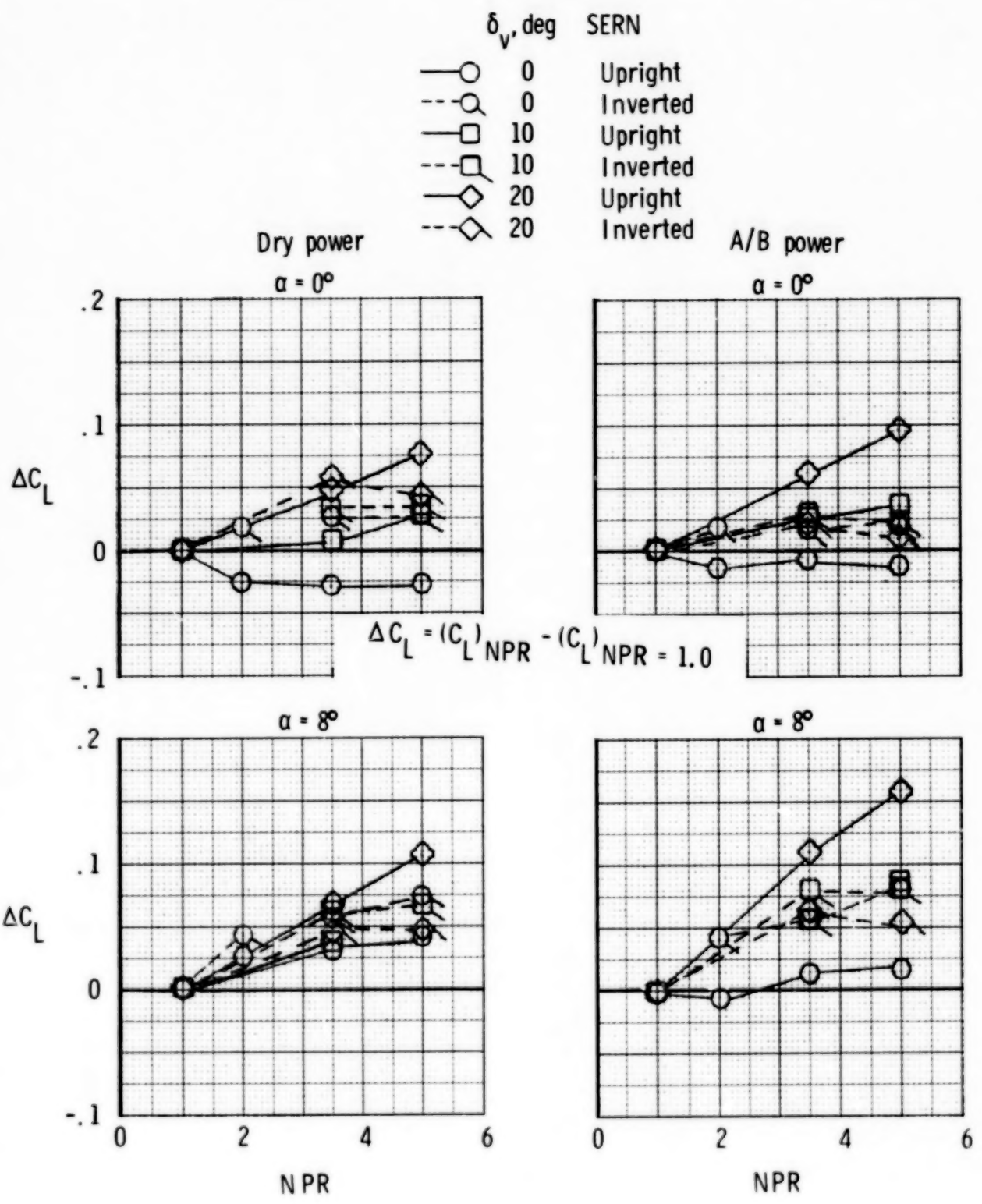
(b) Forward-swept wing.

Figure 25.- Concluded.



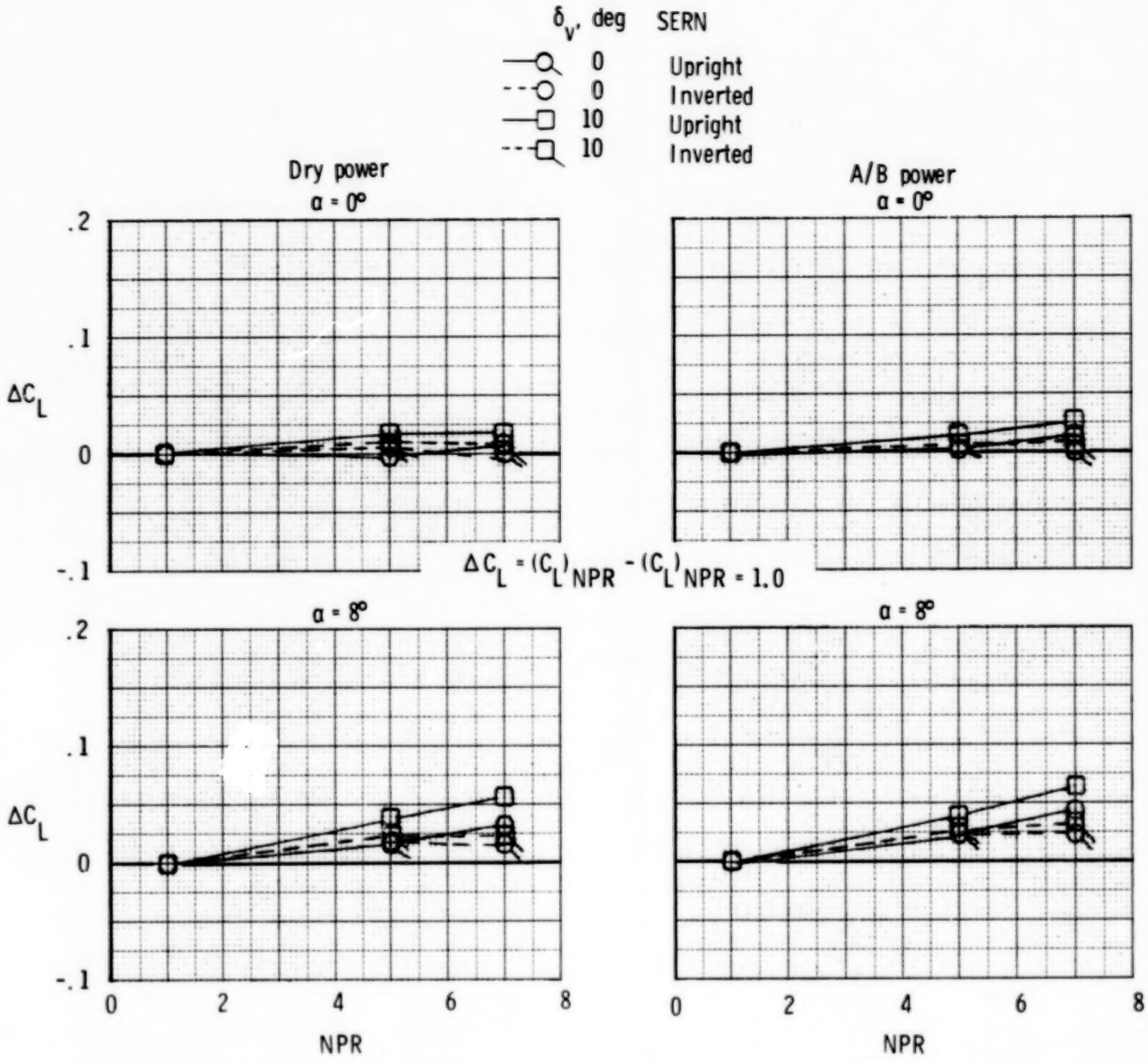
(a) M = 0.60.

Figure 26.- Comparison of incremental lift for the SERN.



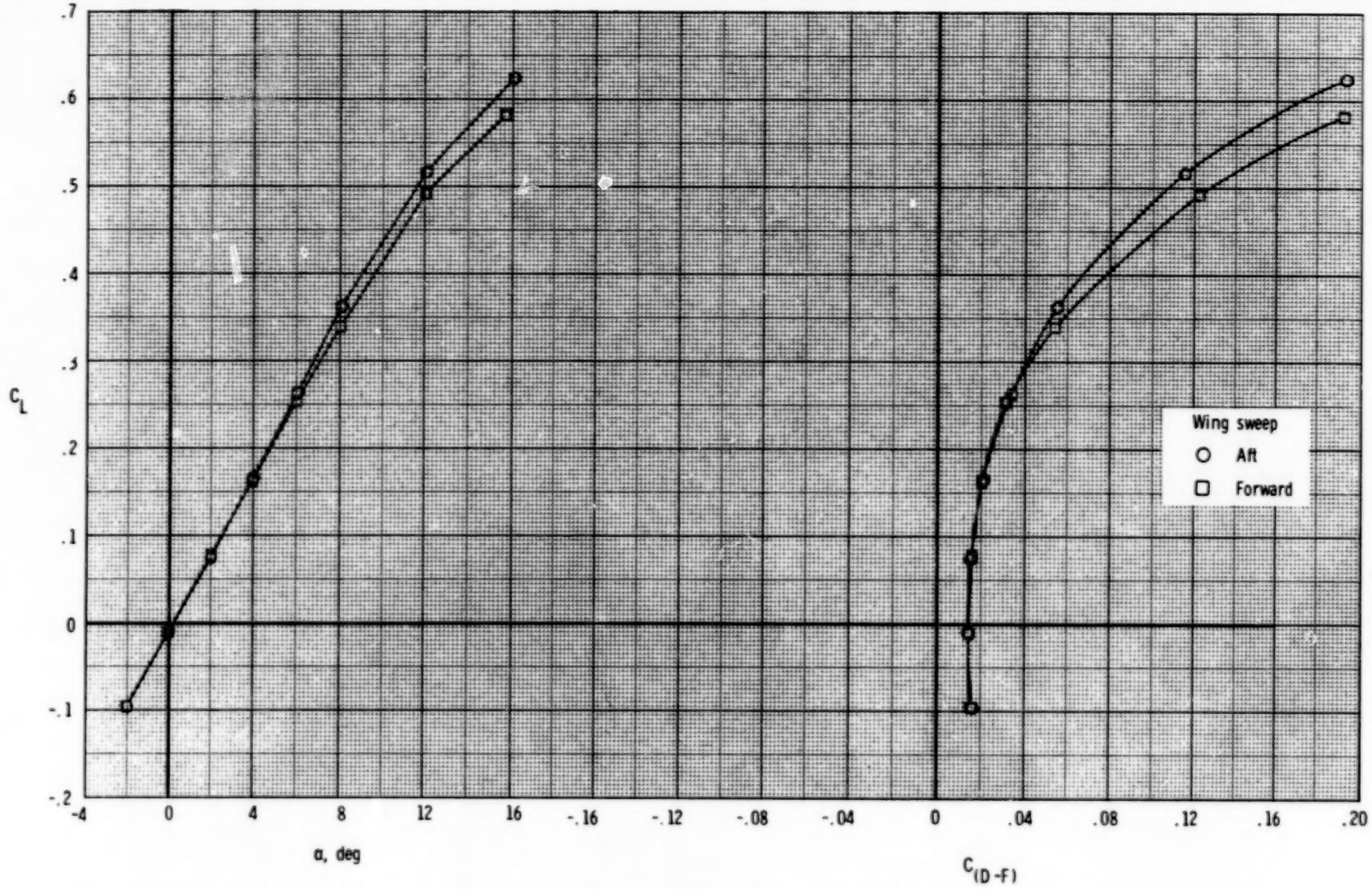
(b) M = 0.90.

Figure 26.- Continued.



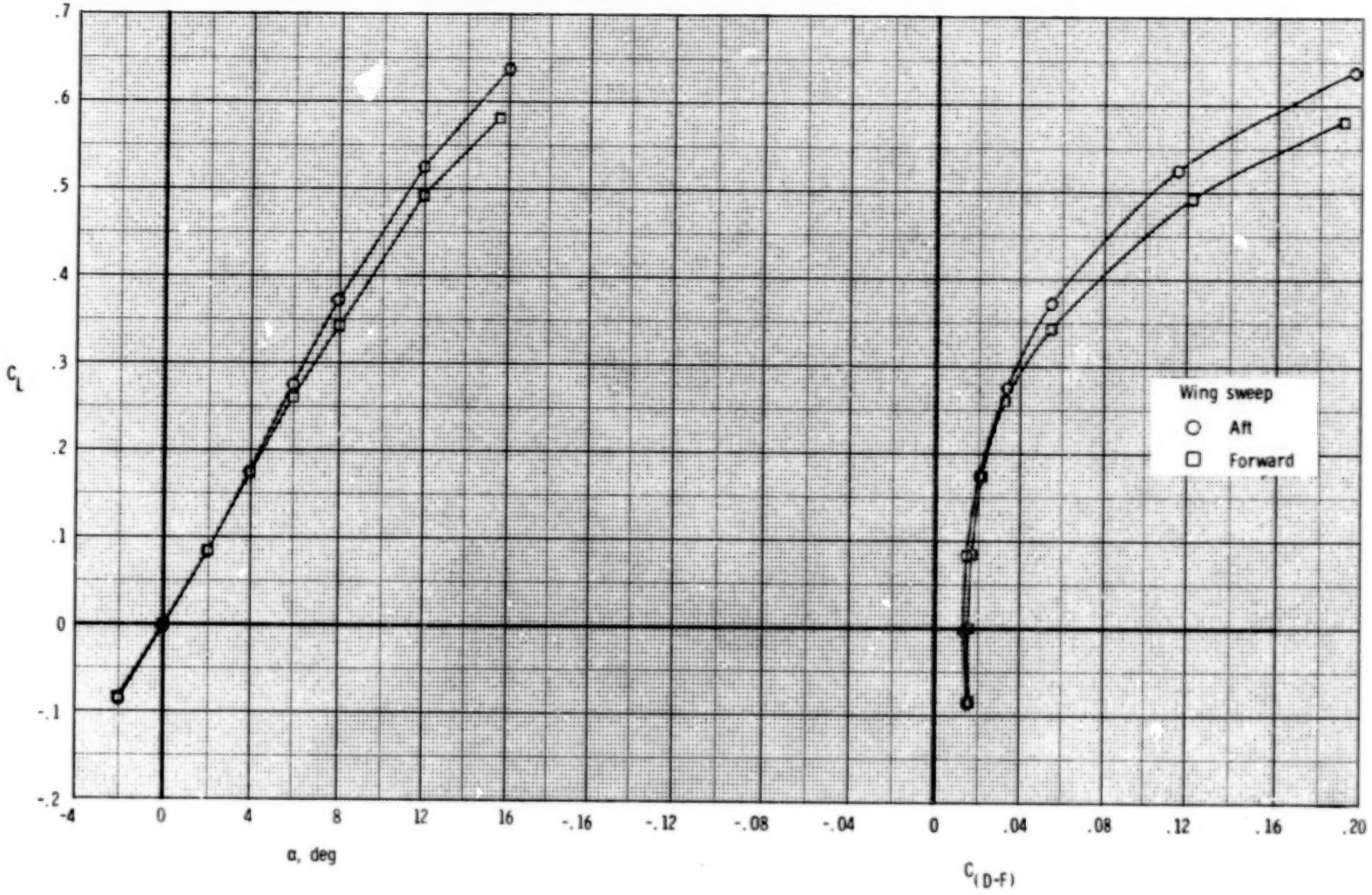
(c) M = 1.20.

Figure 26.- Concluded.



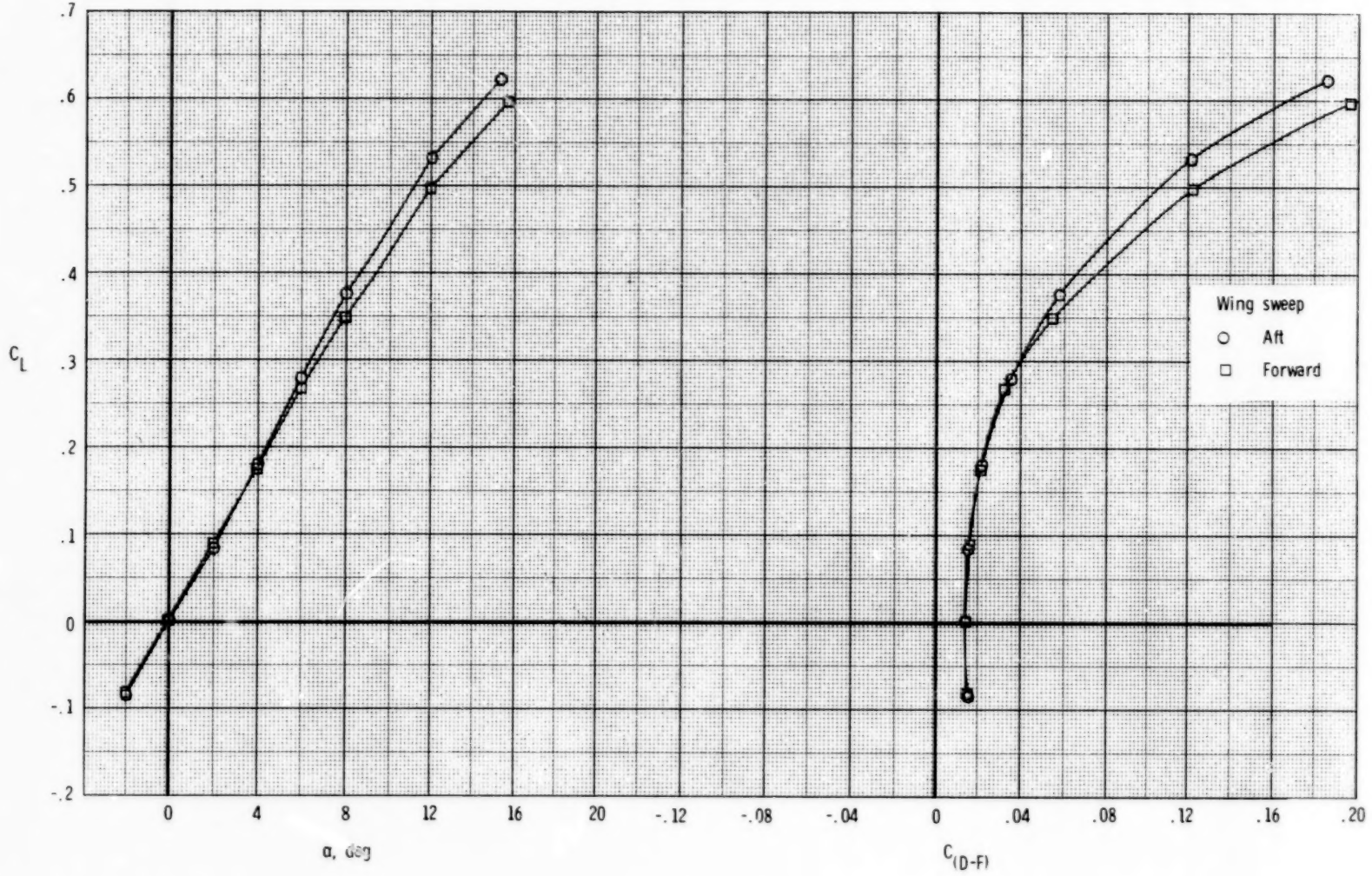
(a) $\delta_v = 0^o$.

Figure 27.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 0.60; NPR = 1.0.



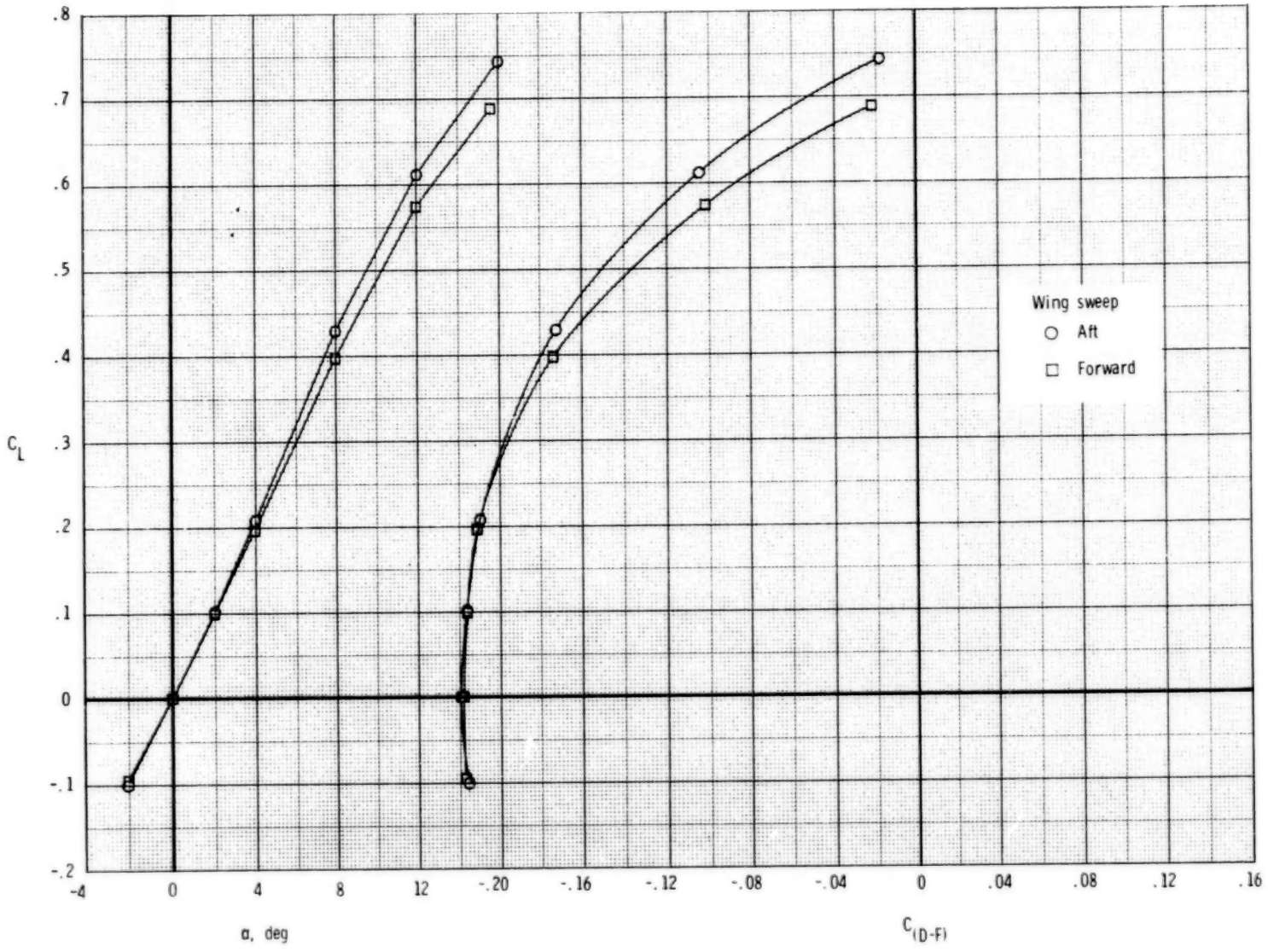
(b) $\delta_v = 10^o$.

Figure 27.- Continued.



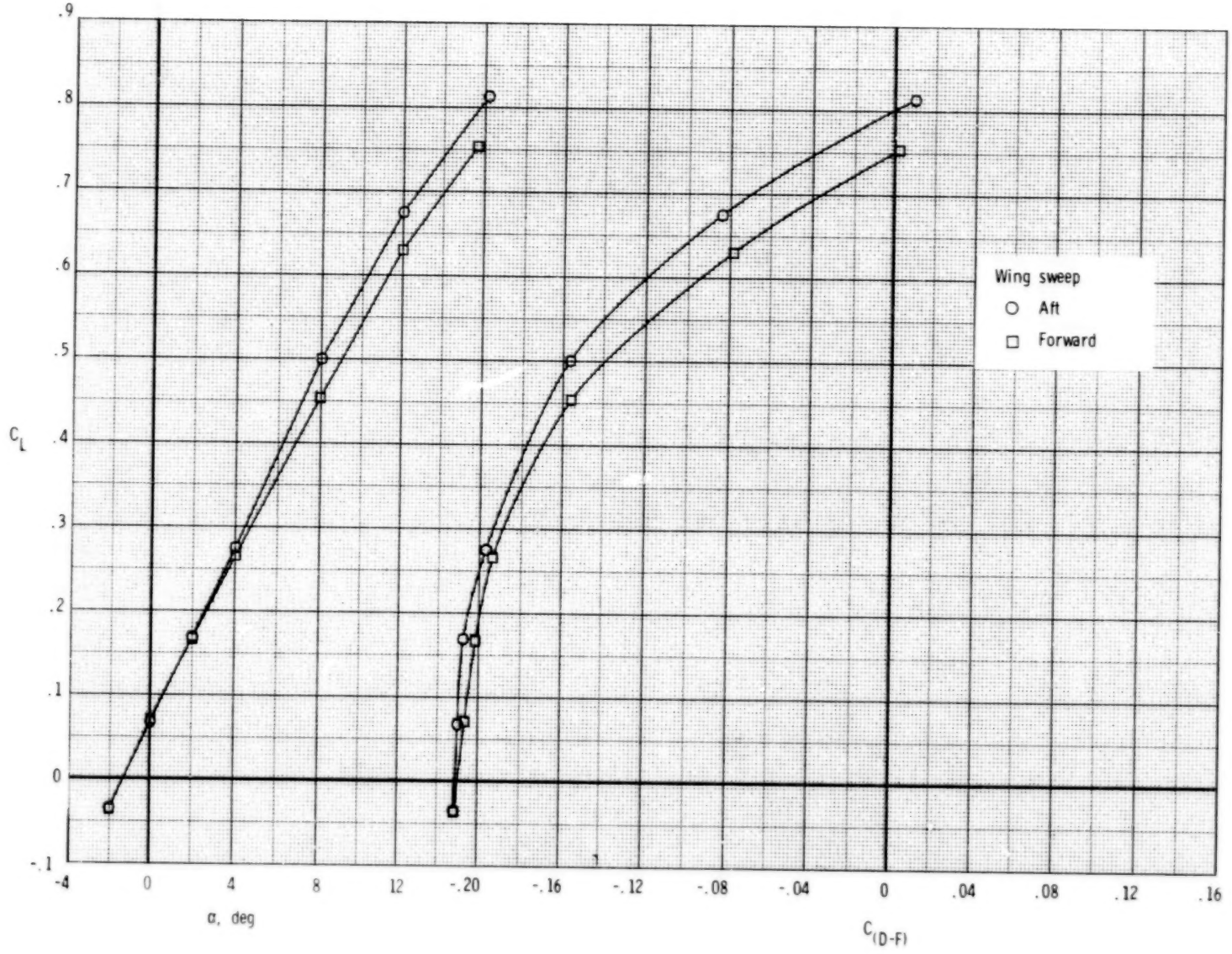
(c) $\delta_v = 20^o$.

Figure 27.- Concluded.



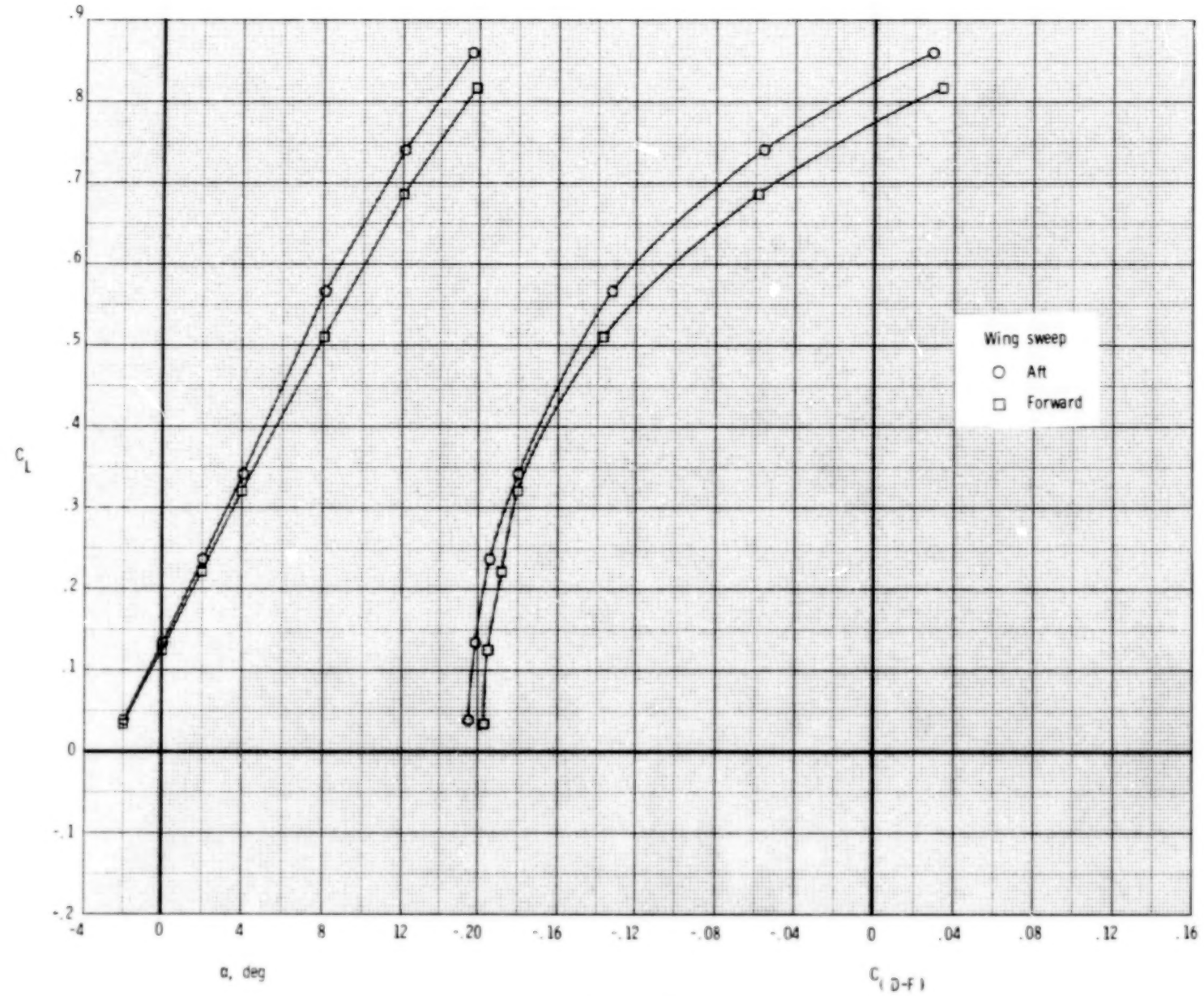
(a) $\delta_v = 0^o$.

Figure 28.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 0.60; NPR = 3.5.



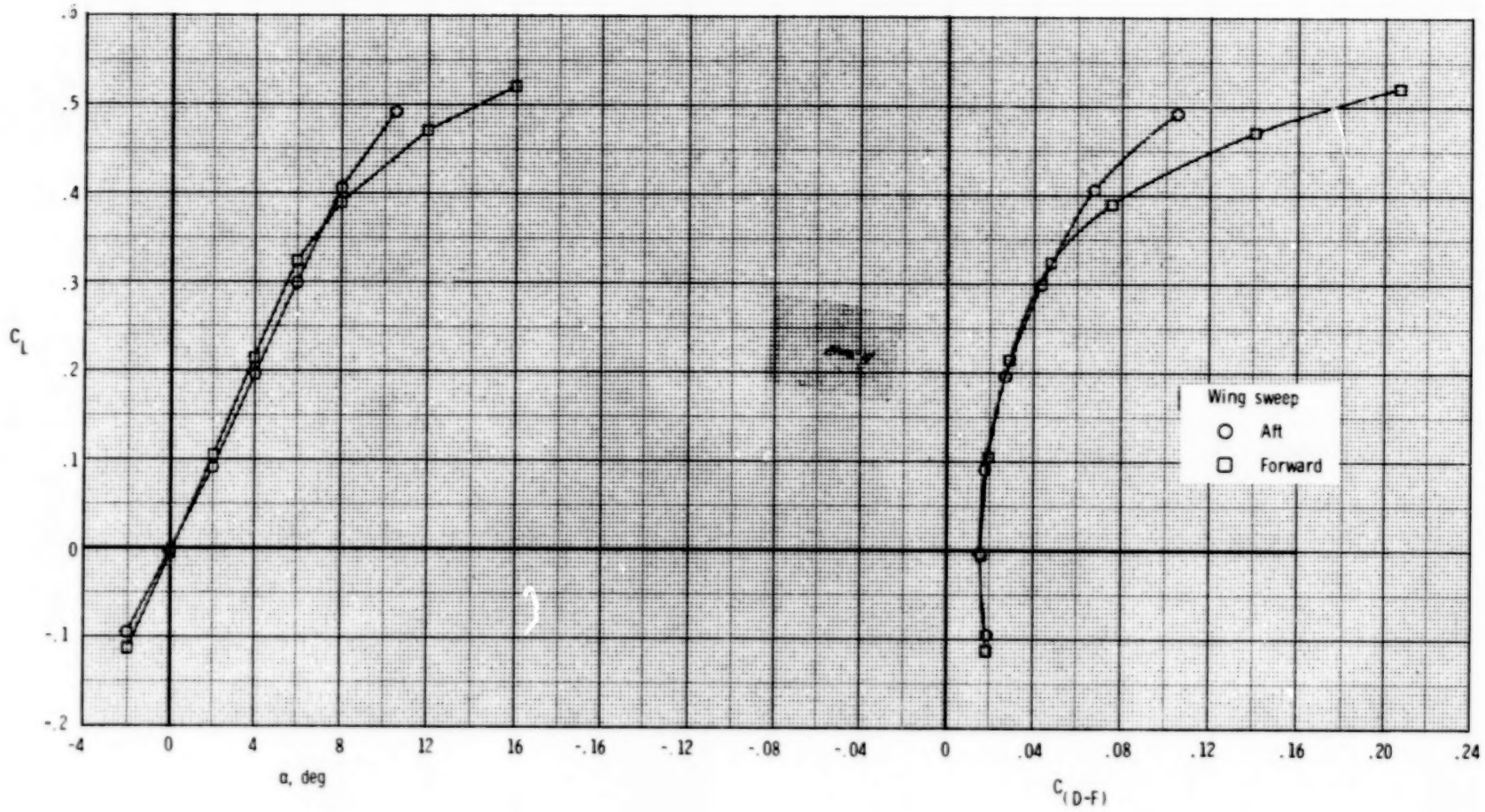
(b) $\delta_v = 10^o$.

Figure 28.- Continued.



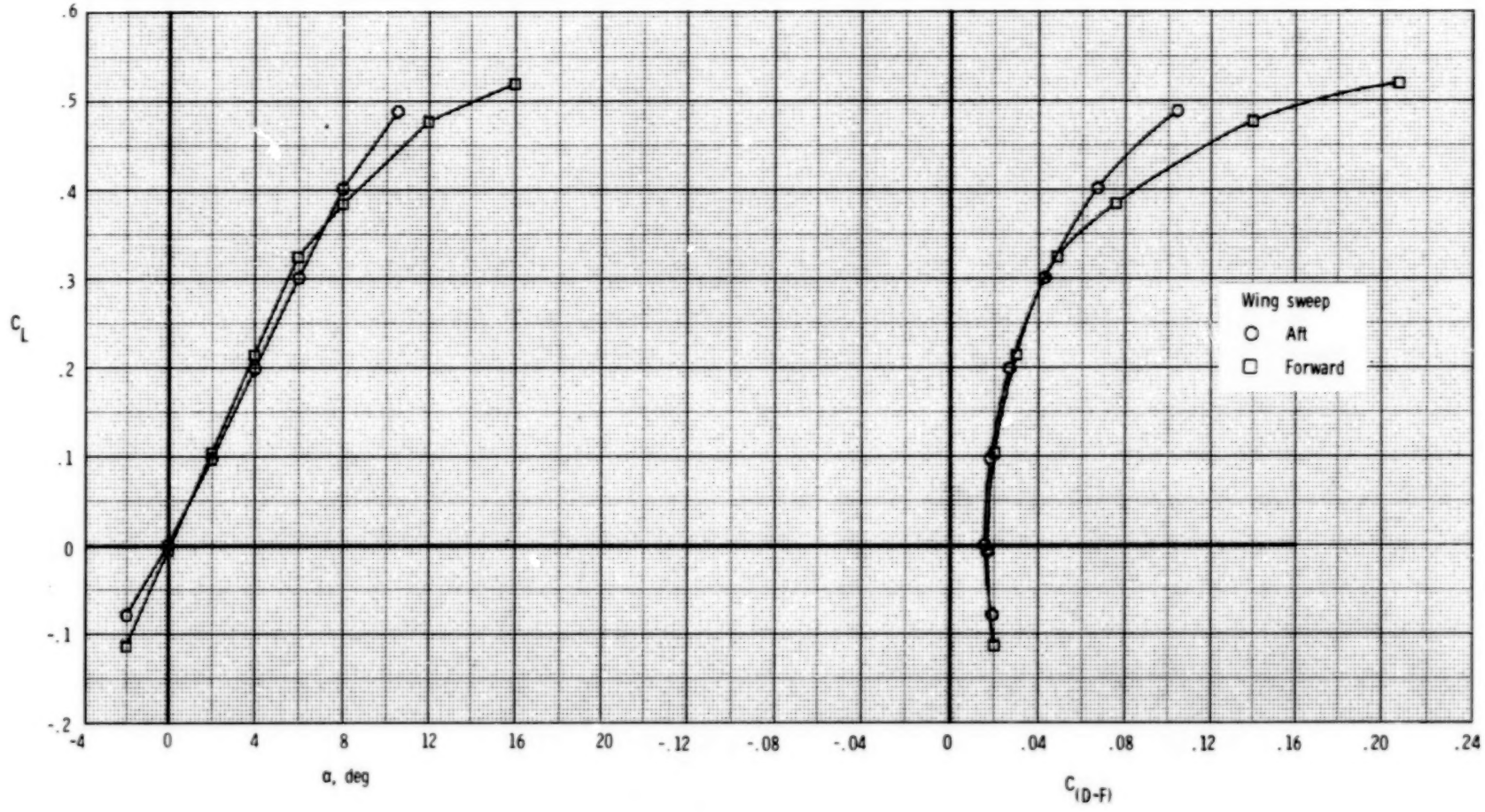
(c) $\delta_v = 20^o$.

Figure 28.- Concluded.



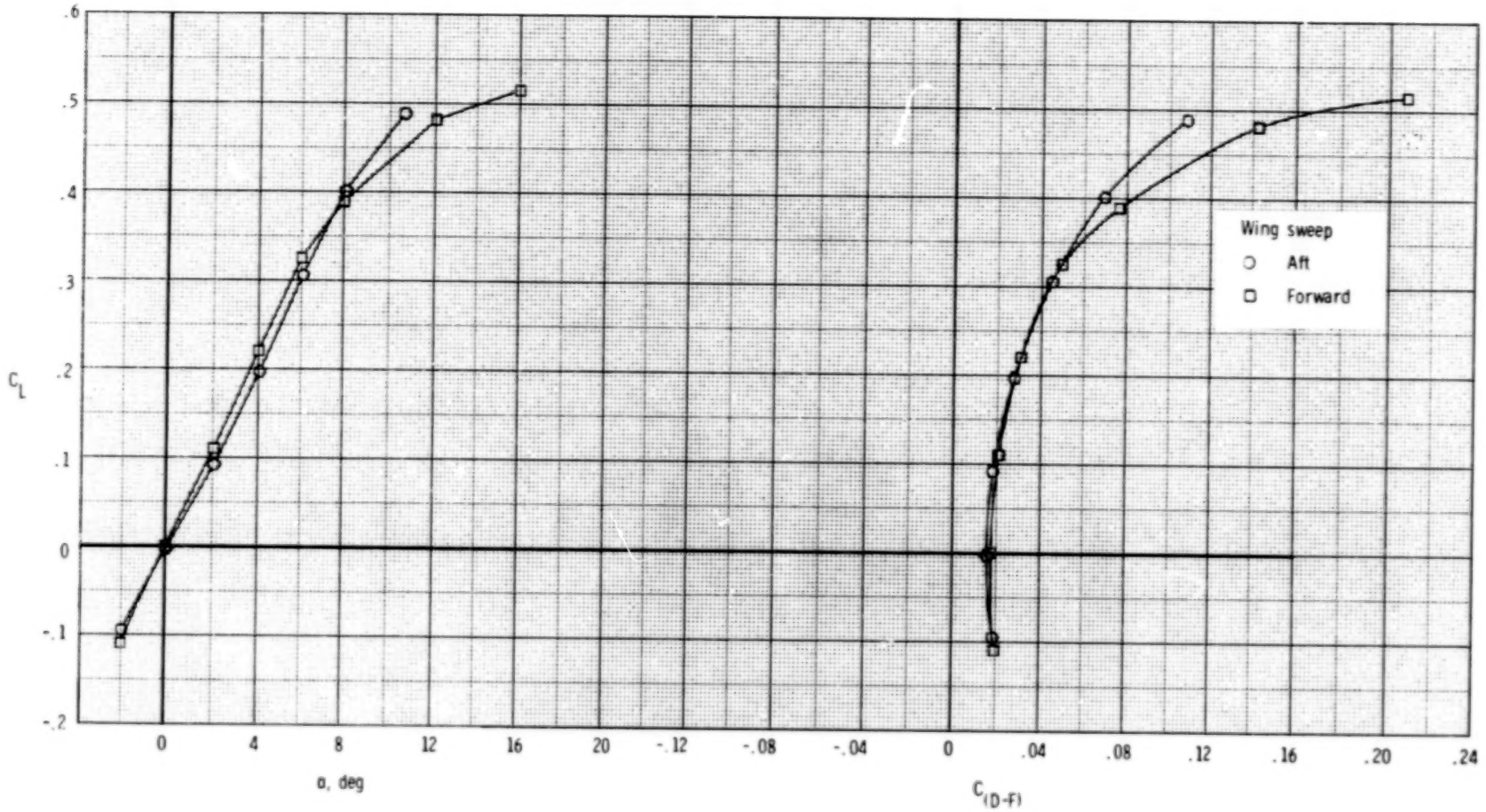
(a) $\delta_v = 0^o$.

Figure 29.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 1.0.



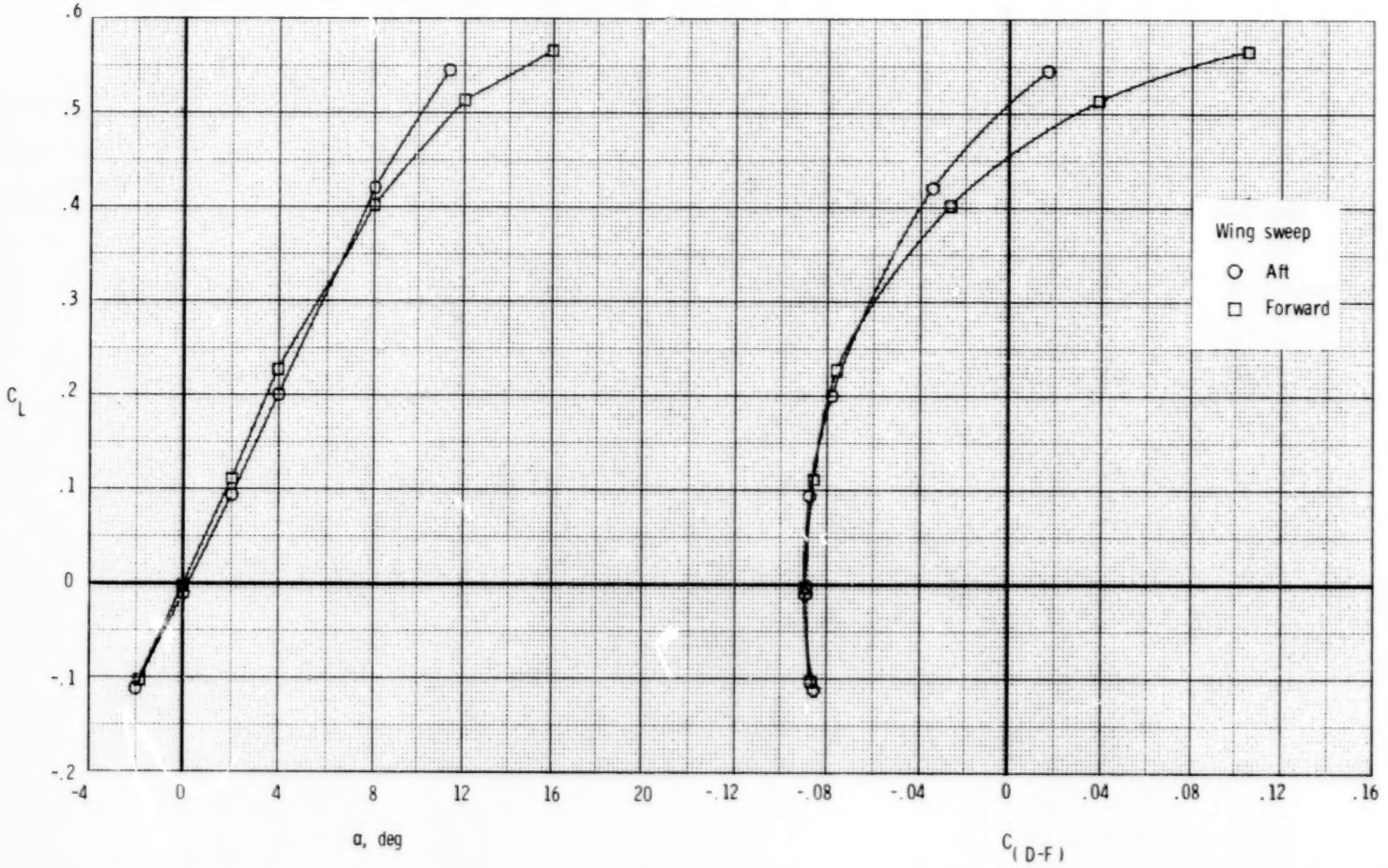
(b) $\delta_v = 10^o$.

Figure 29.- Continued.



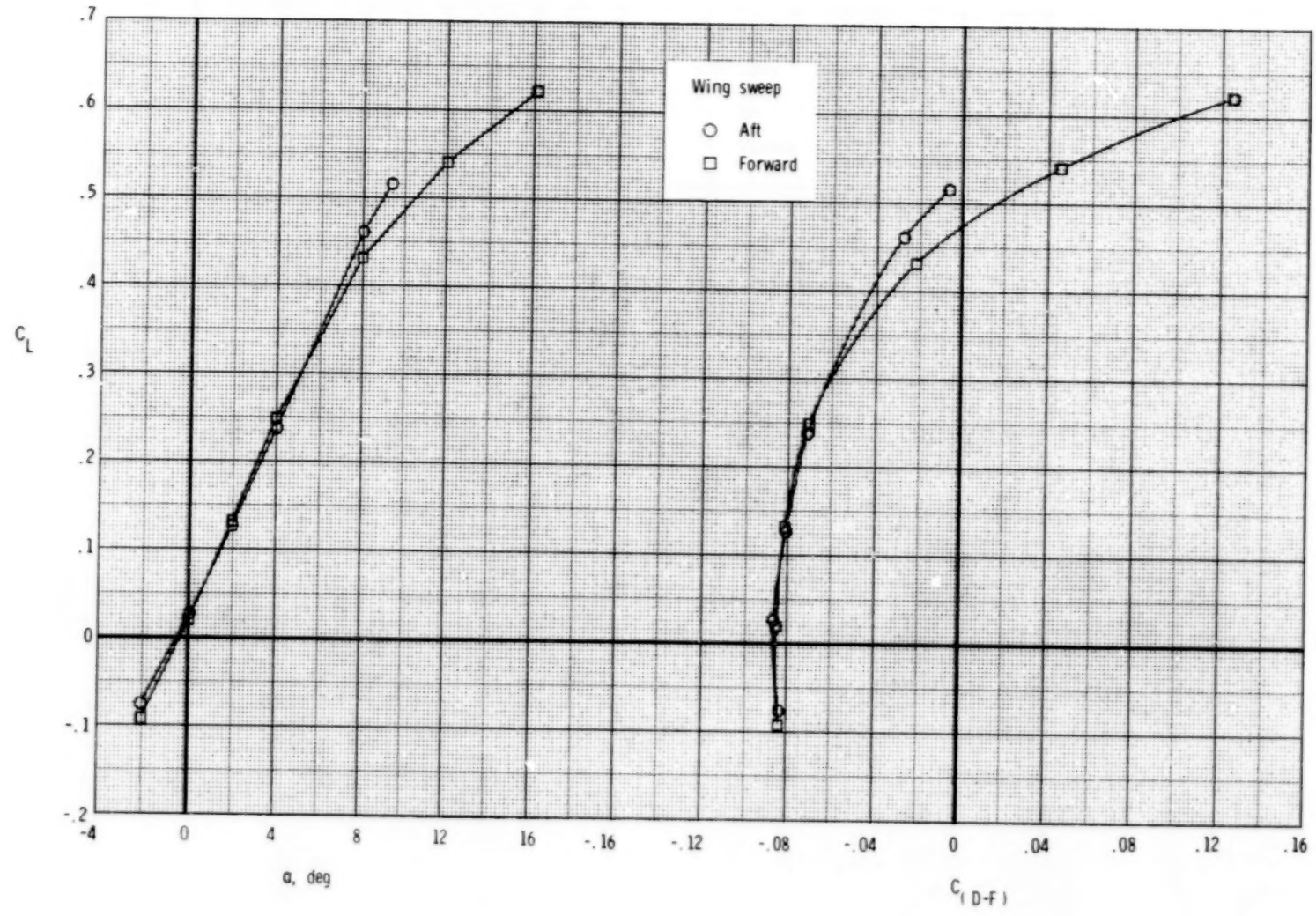
(c) $\delta_v = 20°$.

Figure 29.- Concluded.



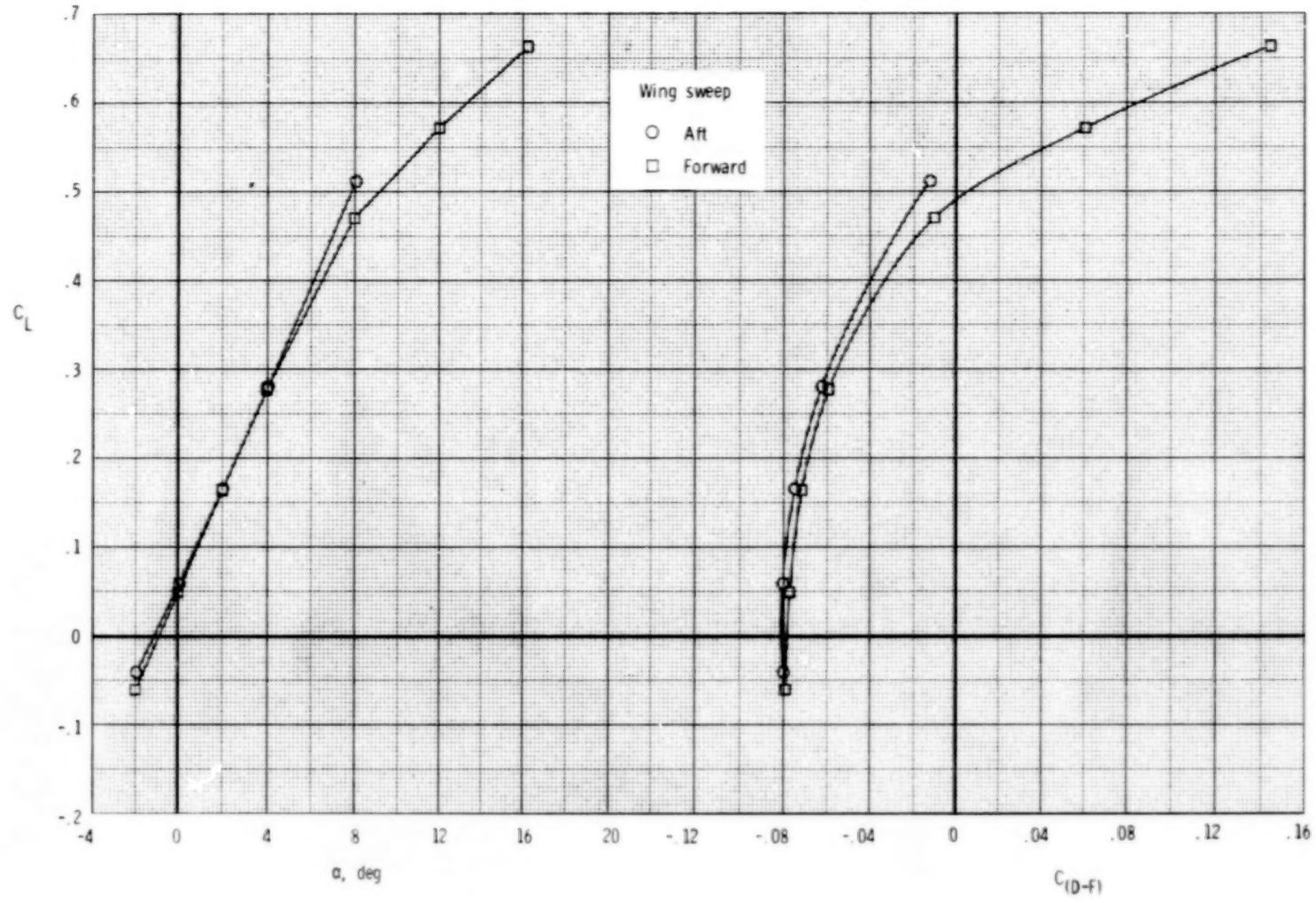
(a) $\delta_v = 0^o$.

Figure 30.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 3.5.



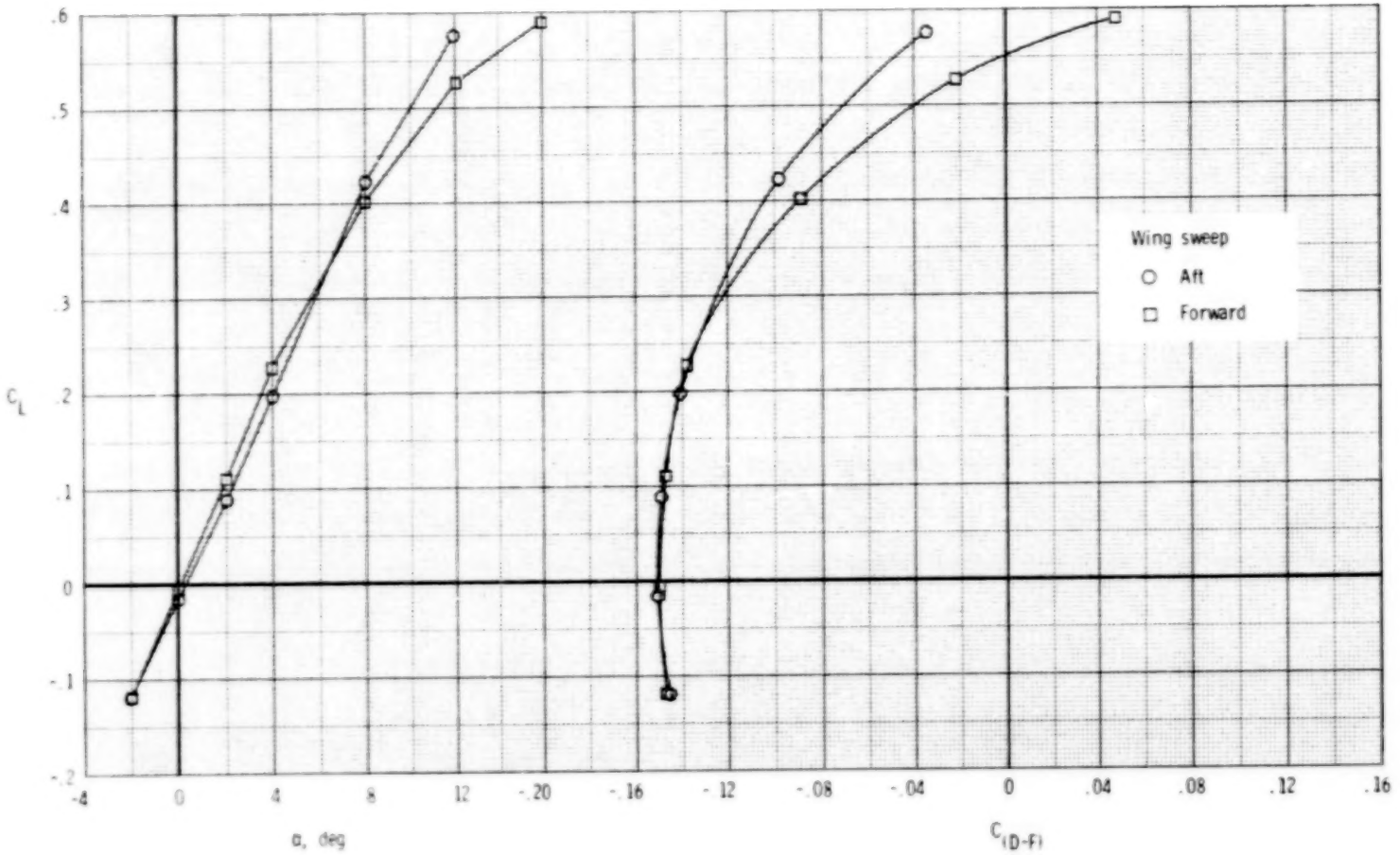
(b) $\delta_v = 10^o$.

Figure 30.- Continued.



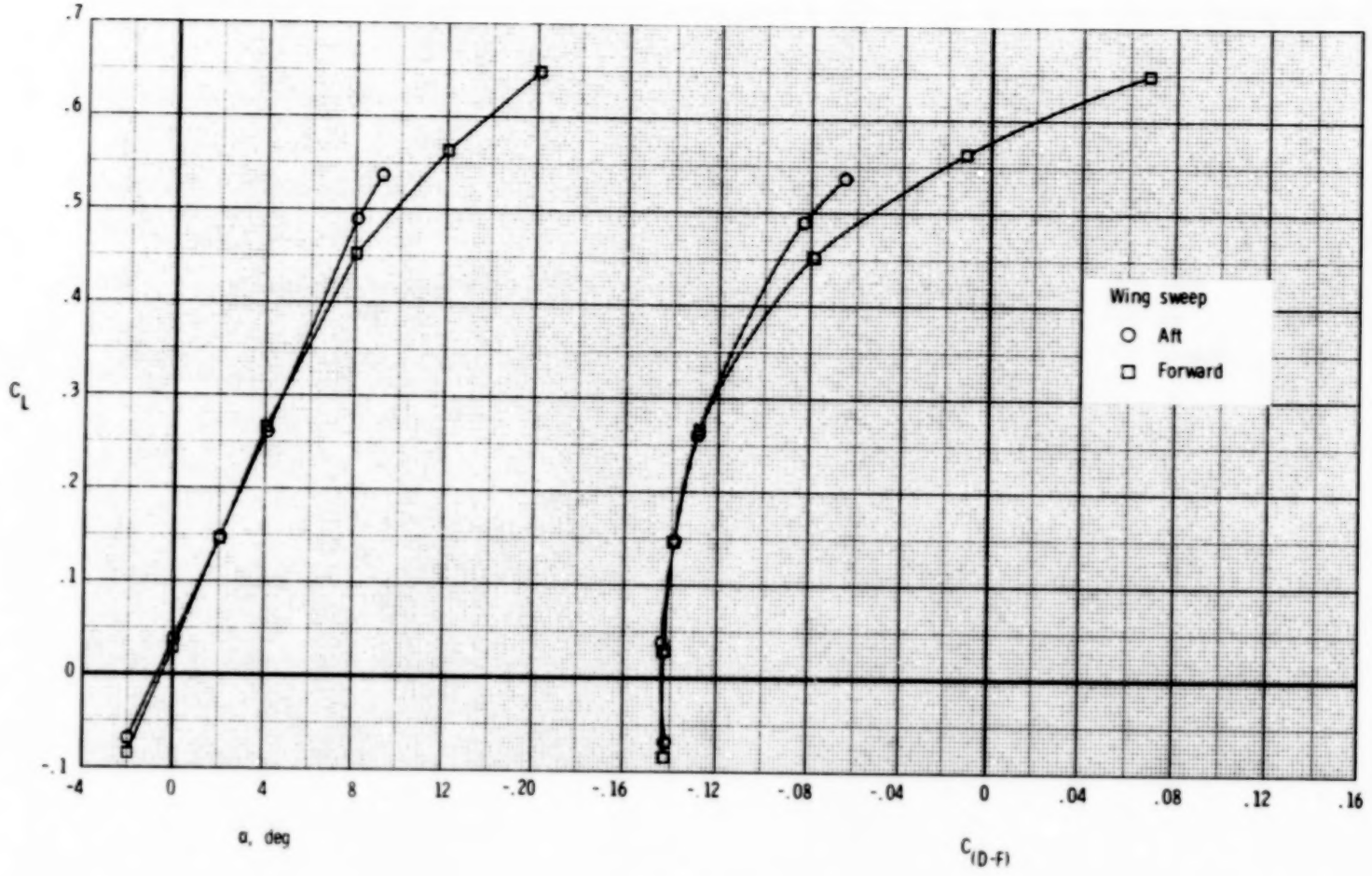
(c) $\delta_v = 20^\circ$.

Figure 30.- Concluded.



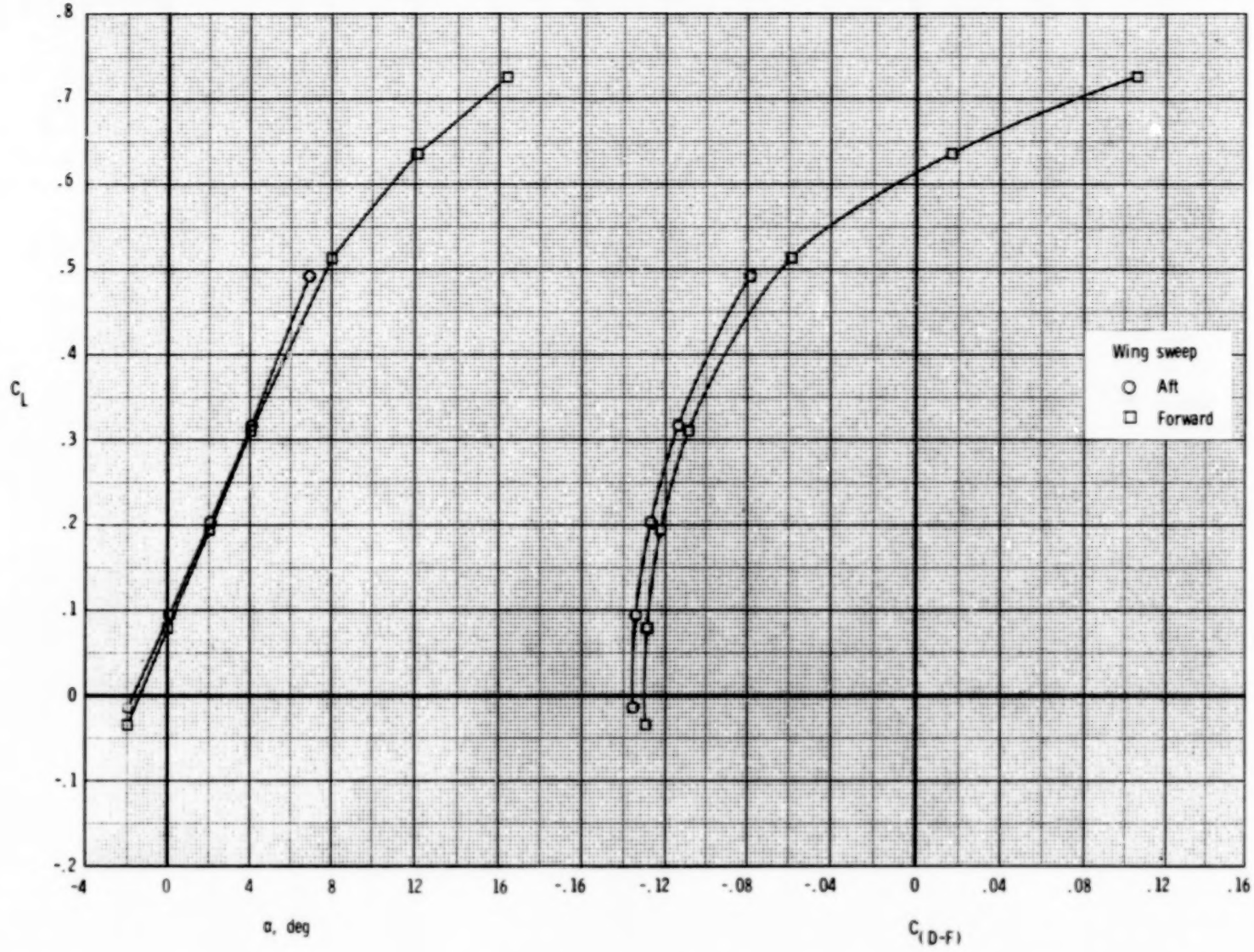
(a) $\delta_v = 0^o$.

Figure 31.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 5.0.



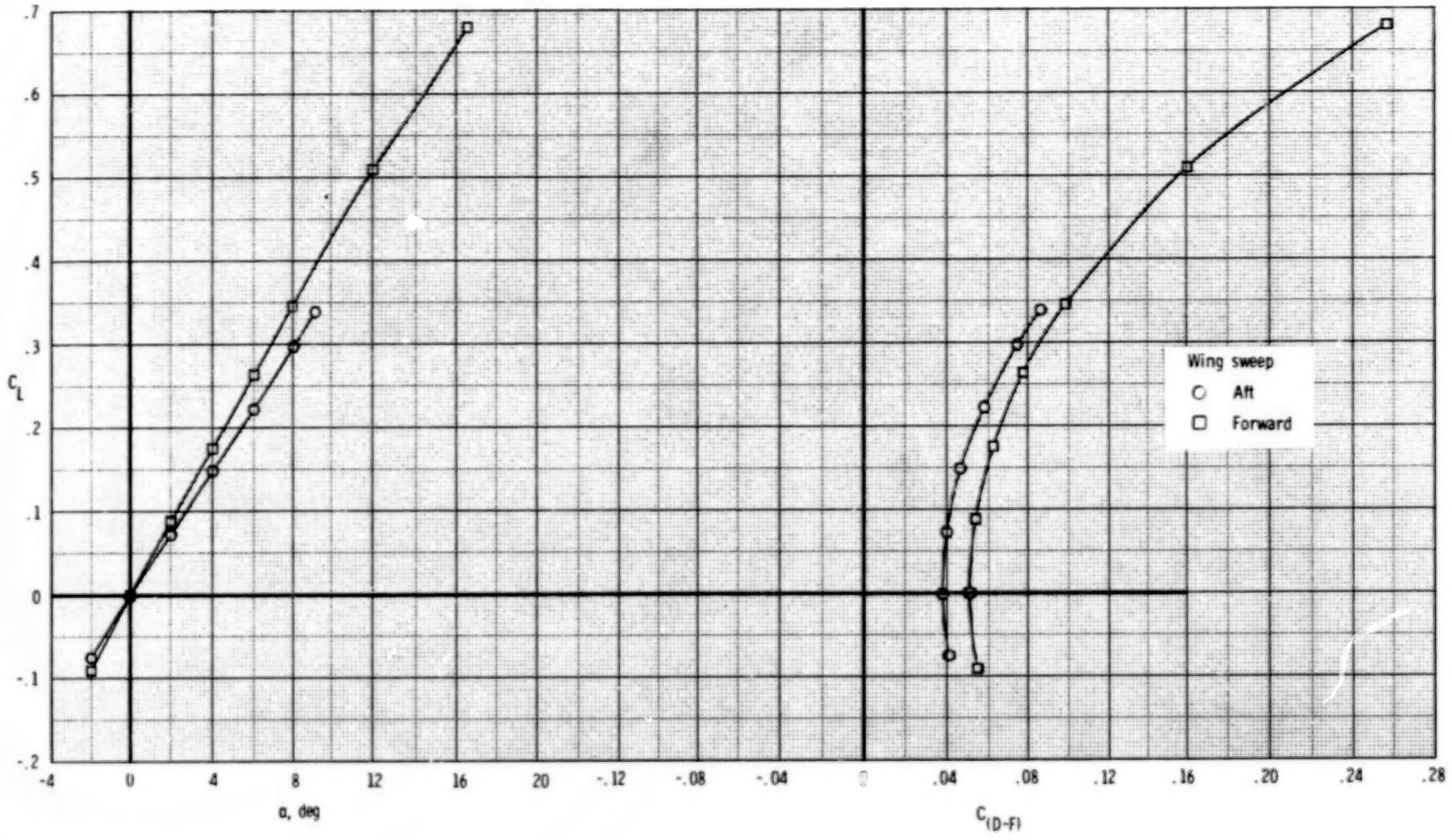
(b) $\delta_v = 10°$.

Figure 31.- Continued.



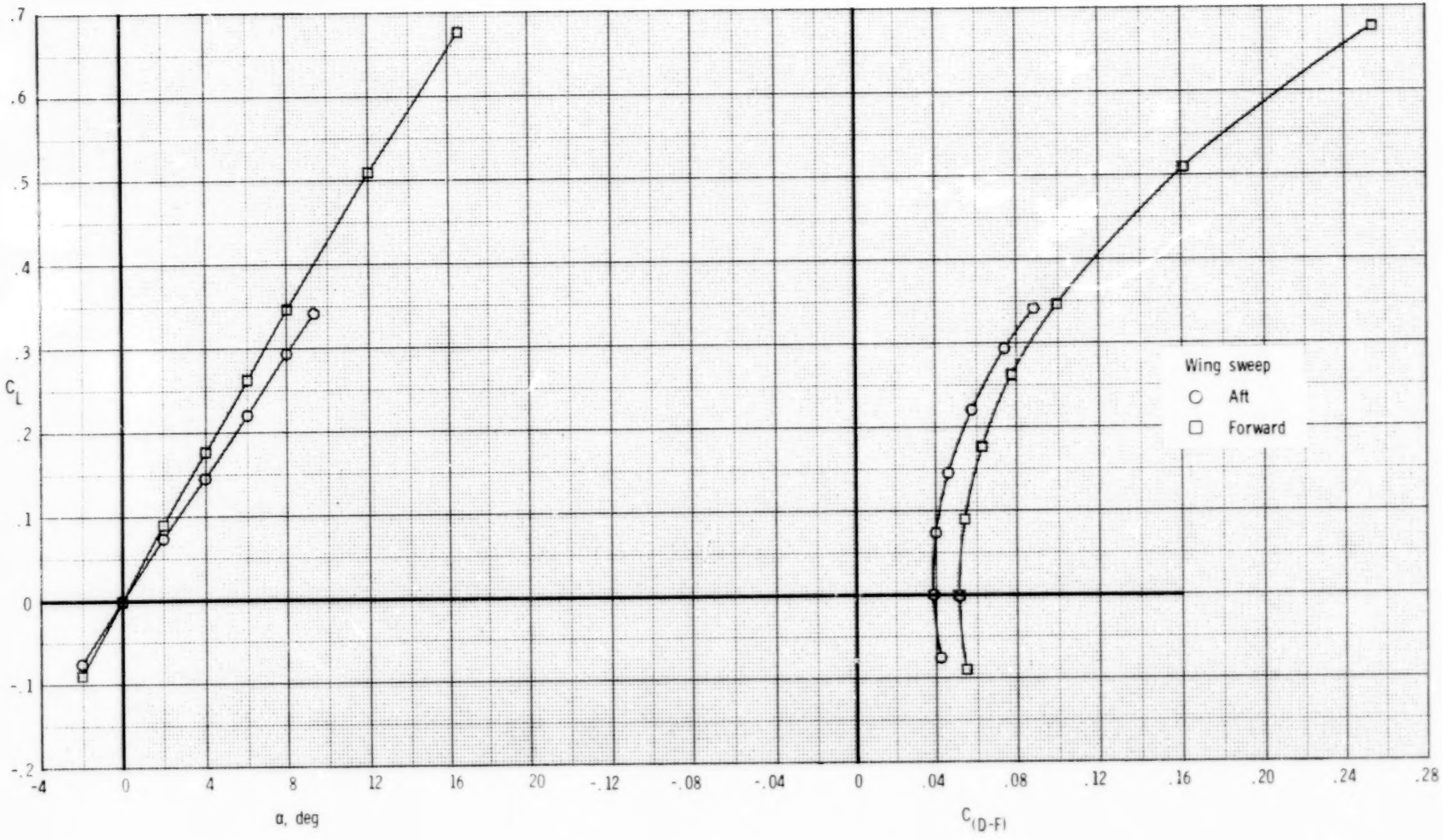
(c) $\delta_v = 20^\circ$.

Figure 31.- Concluded.



(a) $\delta_V = 0^o$.

Figure 32.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 1.20; NPR = 1.0.



(b) $\delta_v = 10^o$.

Figure 32.- Concluded.

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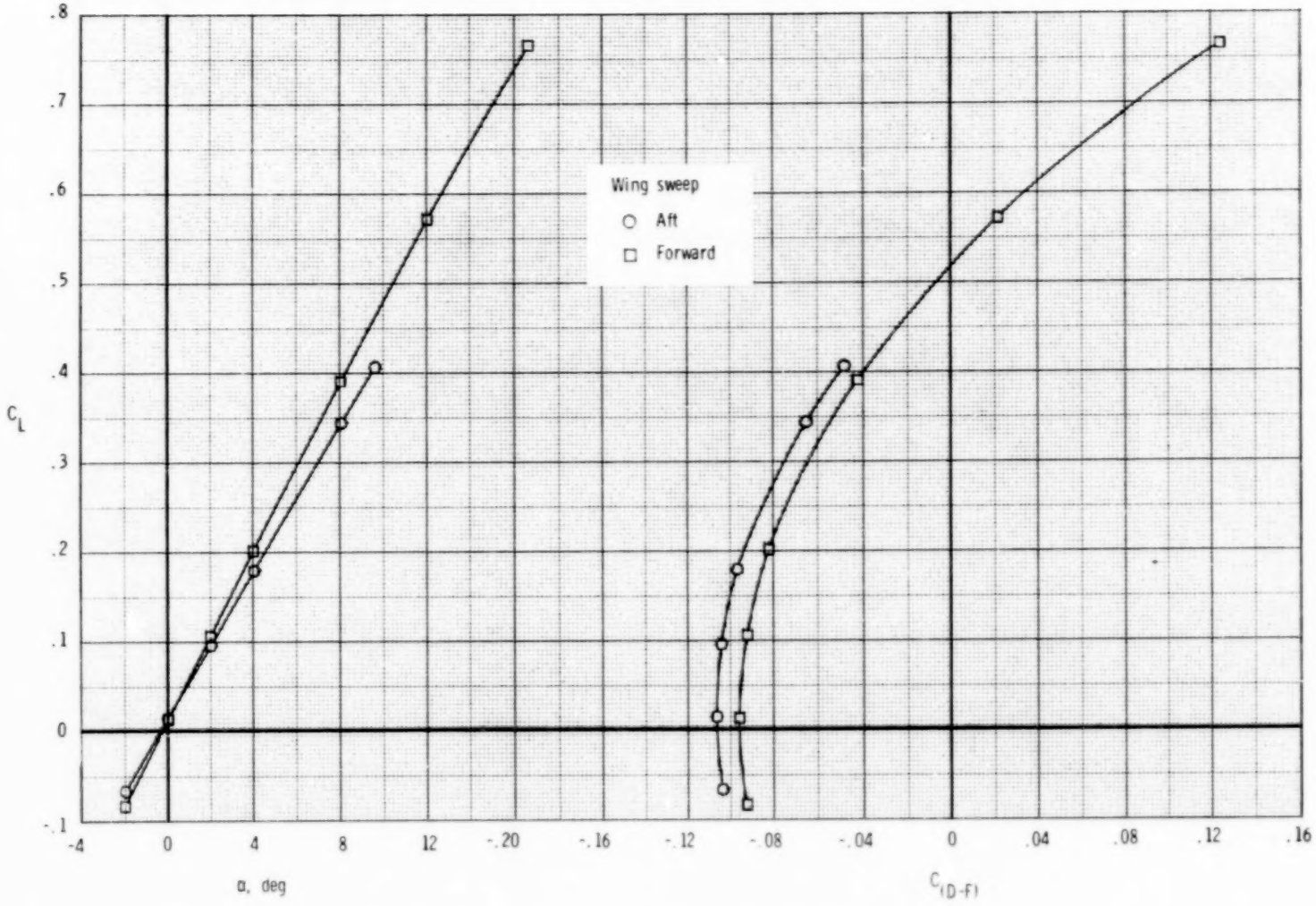
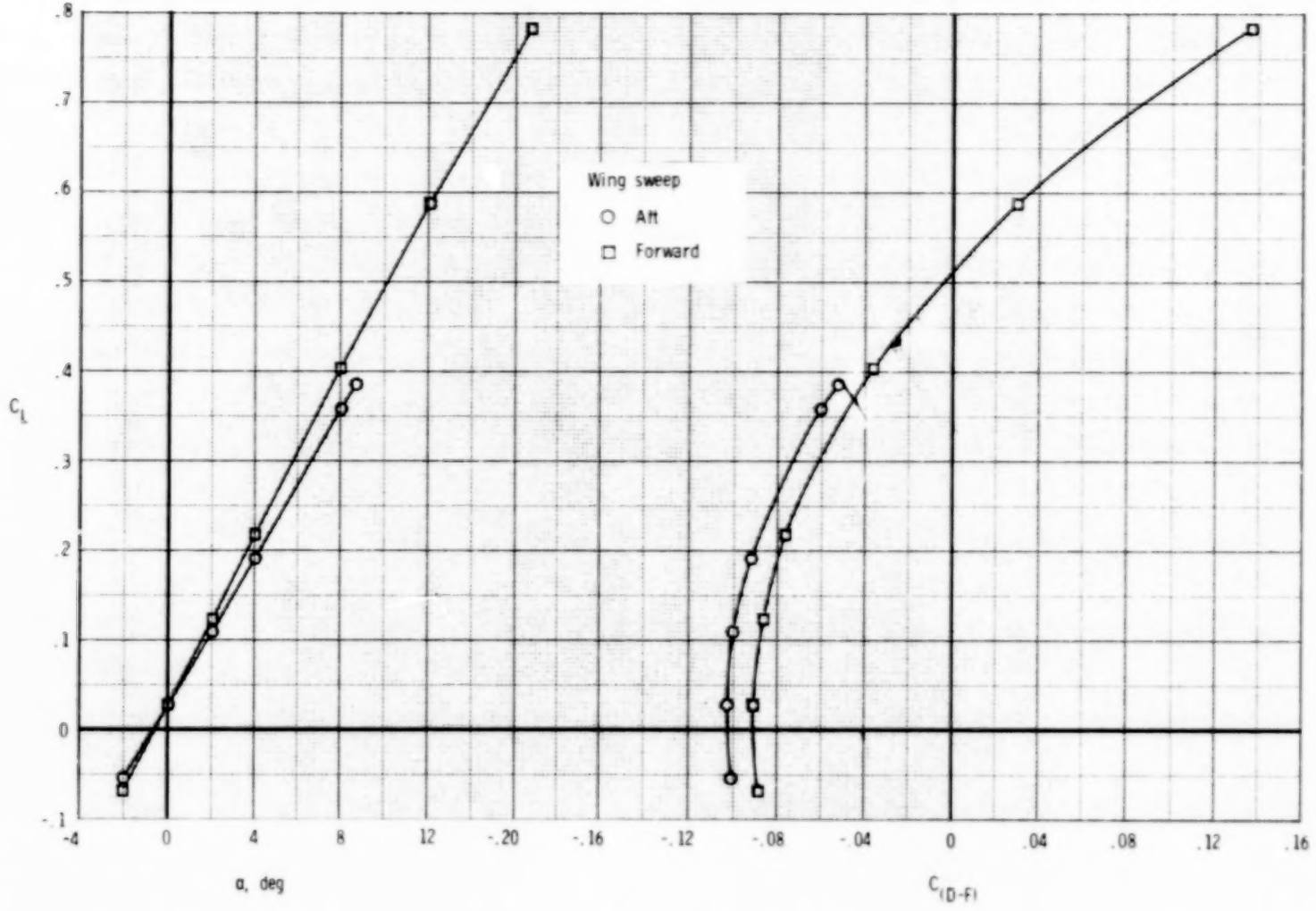


(a) $\delta_v = 0^o$.

Figure 33.- Effect of wing sweep on total aerodynamic characteristics. Upright SERN, A/B power; M = 1.20; NPR = 7.0.



(b) $\delta_v = 10^o$.

Figure 33.- Concluded.

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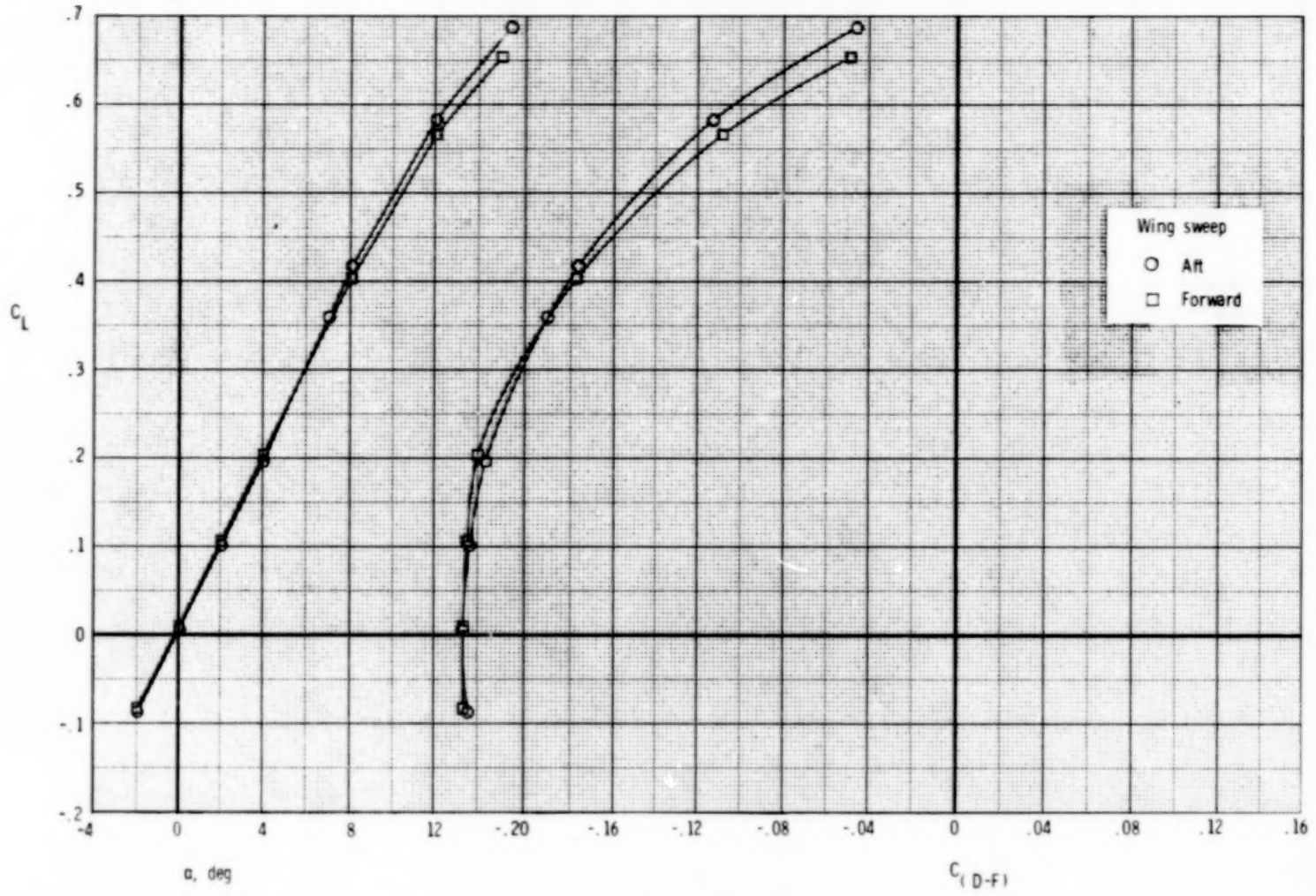
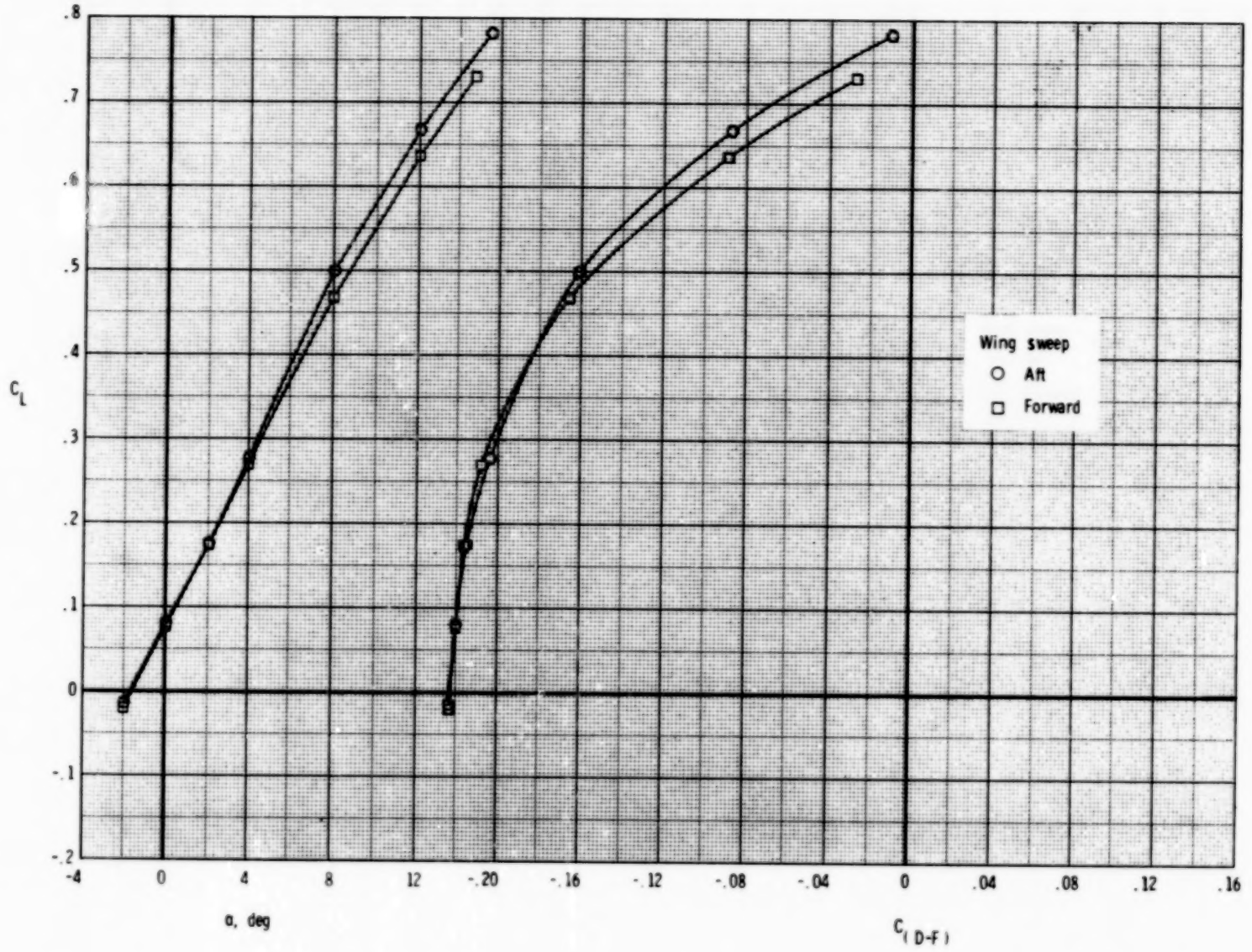


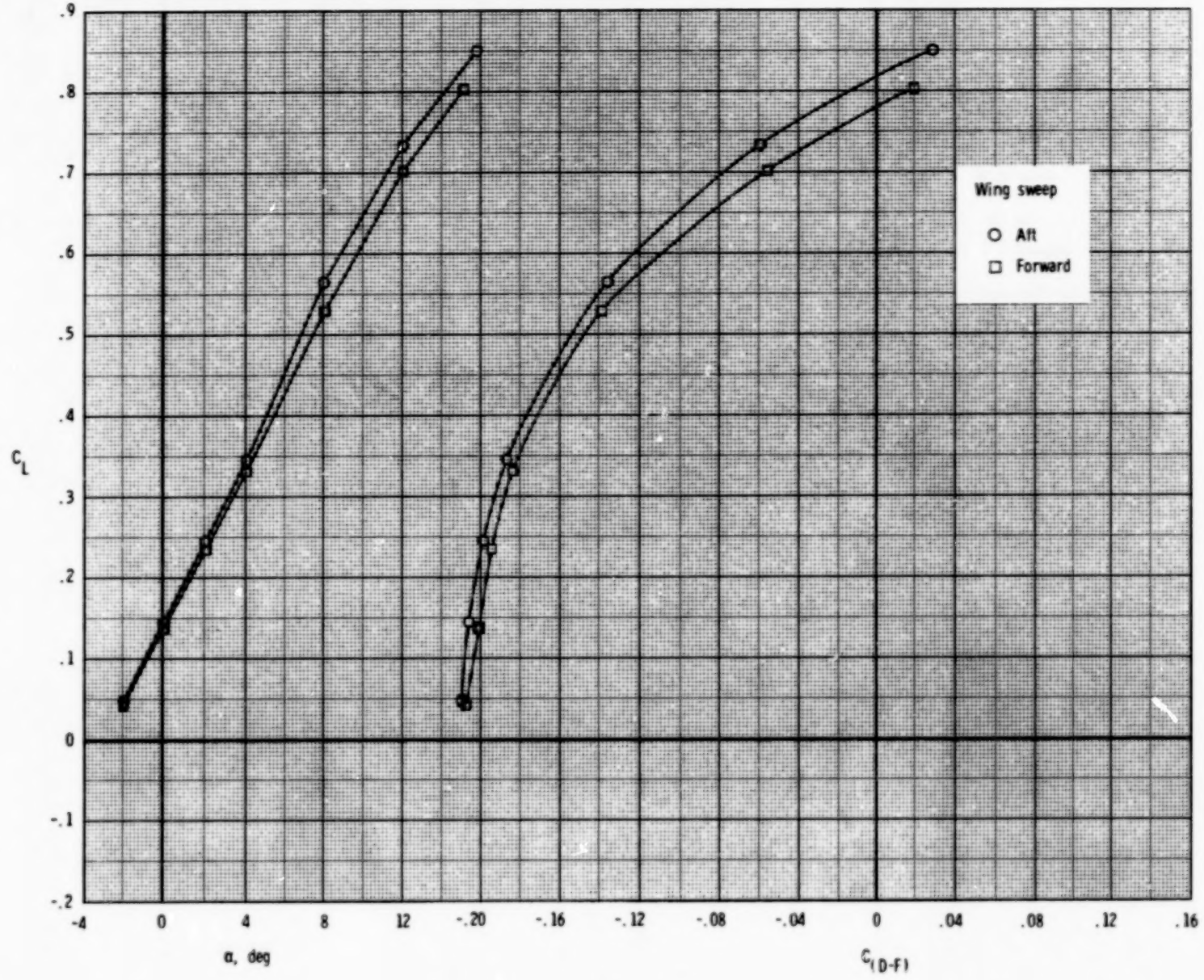
(a) $\delta_v = 0^o$.

Figure 34.- Effect of wing sweep on total aerodynamic characteristics. 2-D C-D nozzle, A/B power; M = 0.60; NPR = 3.5.



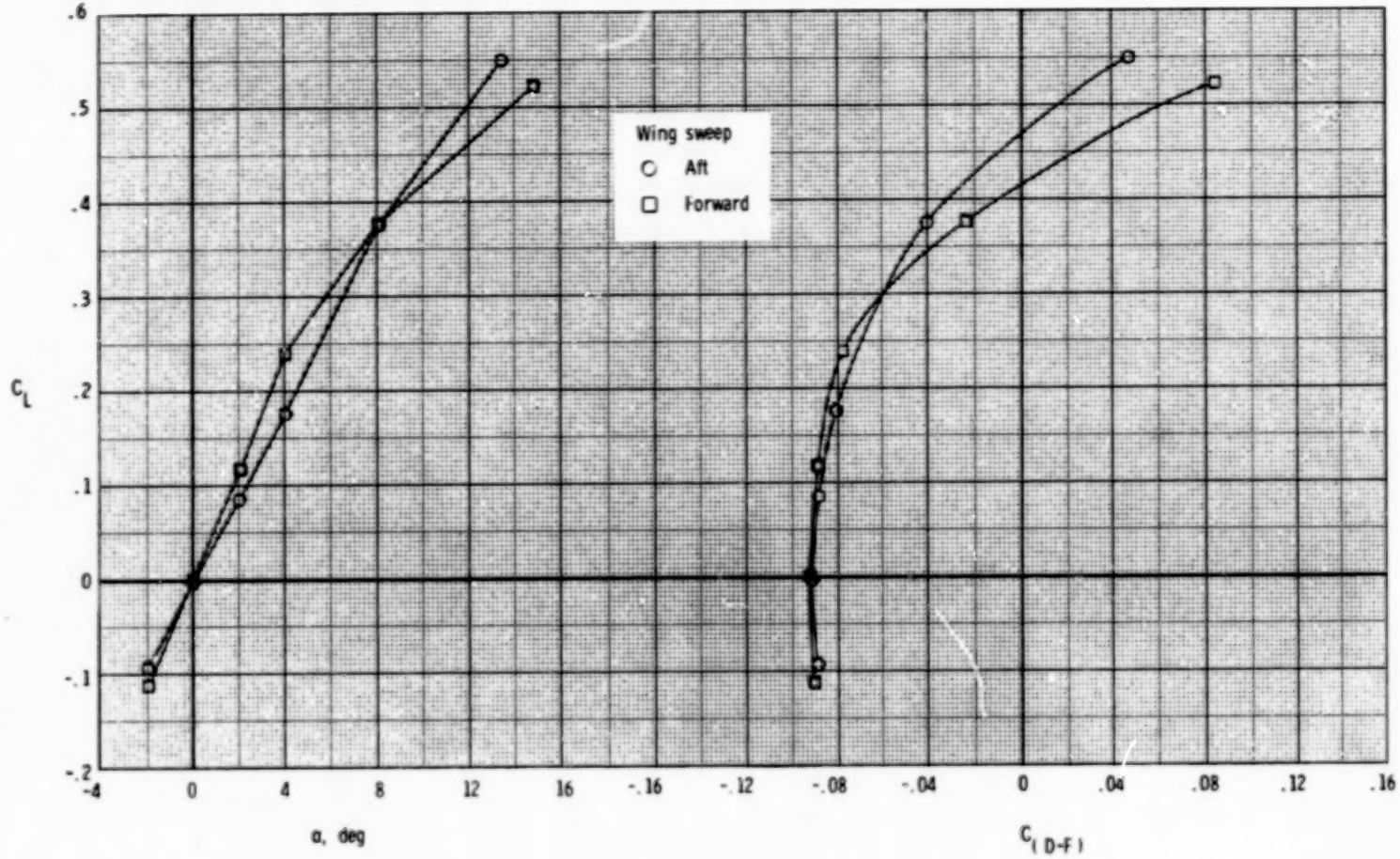
(b) $\delta_v = 10^\circ$.

Figure 34.- Continued.



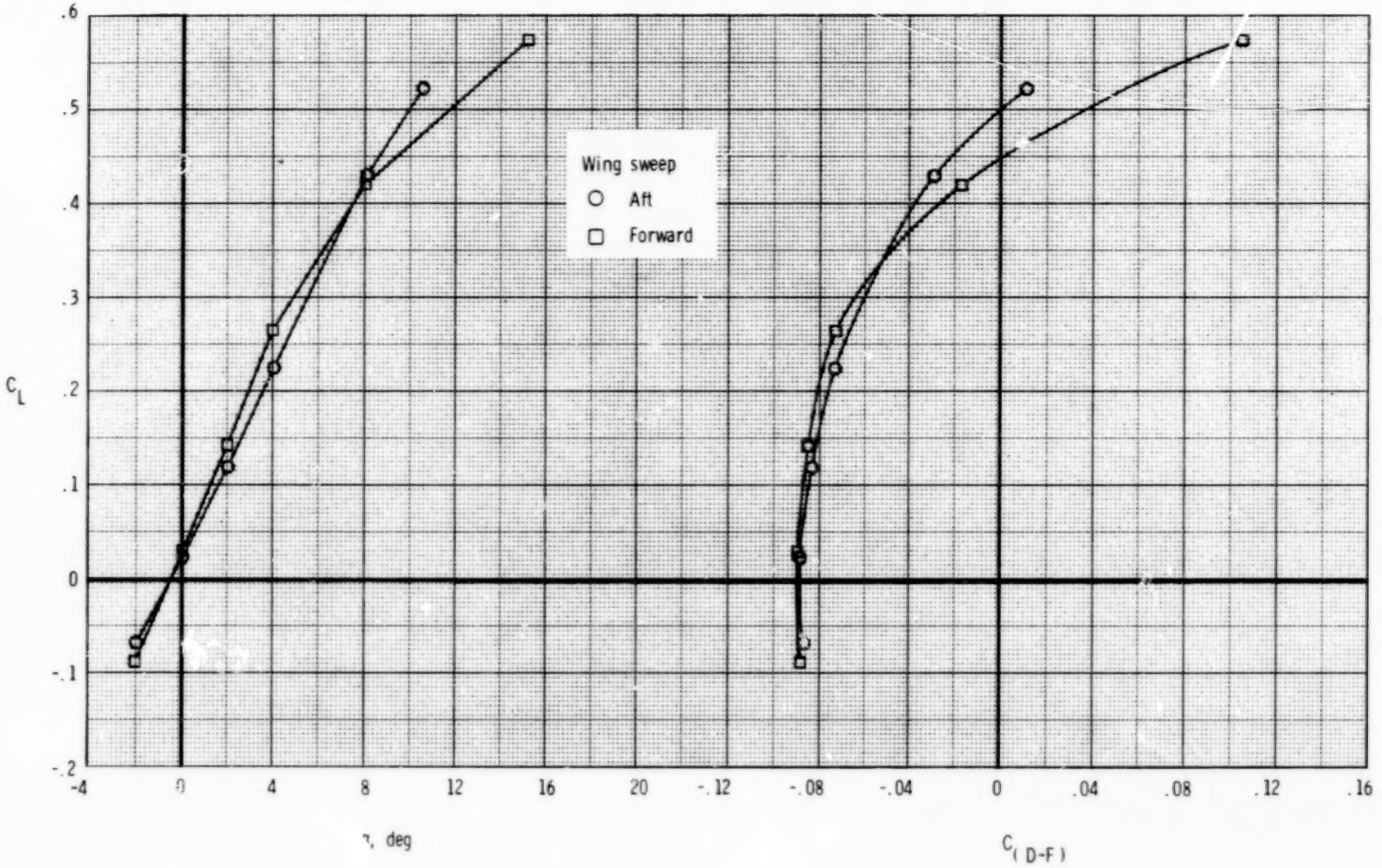
(c) $\delta_v = 20^o$.

Figure 34.- Concluded.



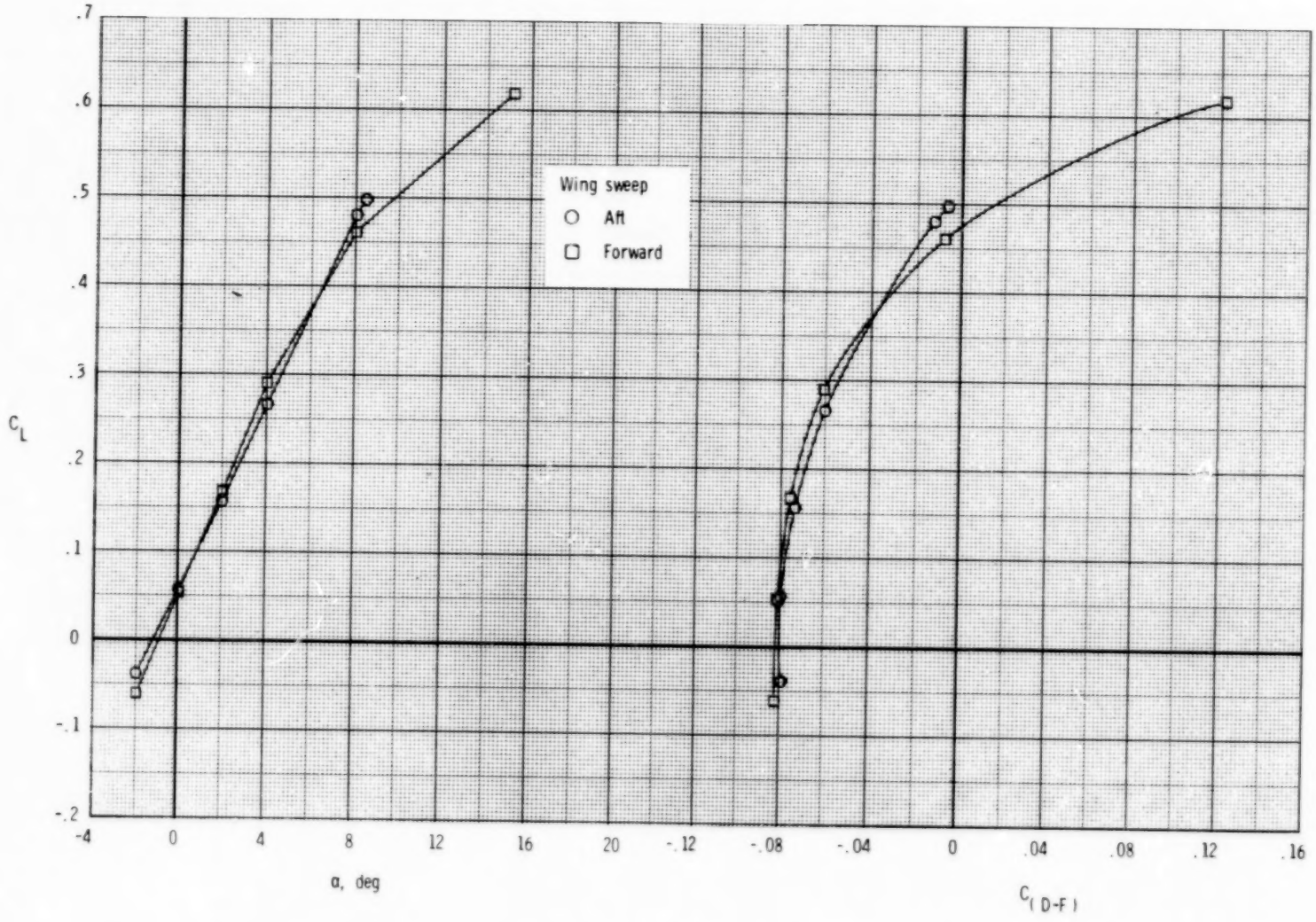
(a) $\delta_v = 0^o$.

Figure 35.- Effect of wing sweep on total aerodynamic characteristics. 2-D C-D nozzle, A/B power; M = 0.90; NPR = 3.5.



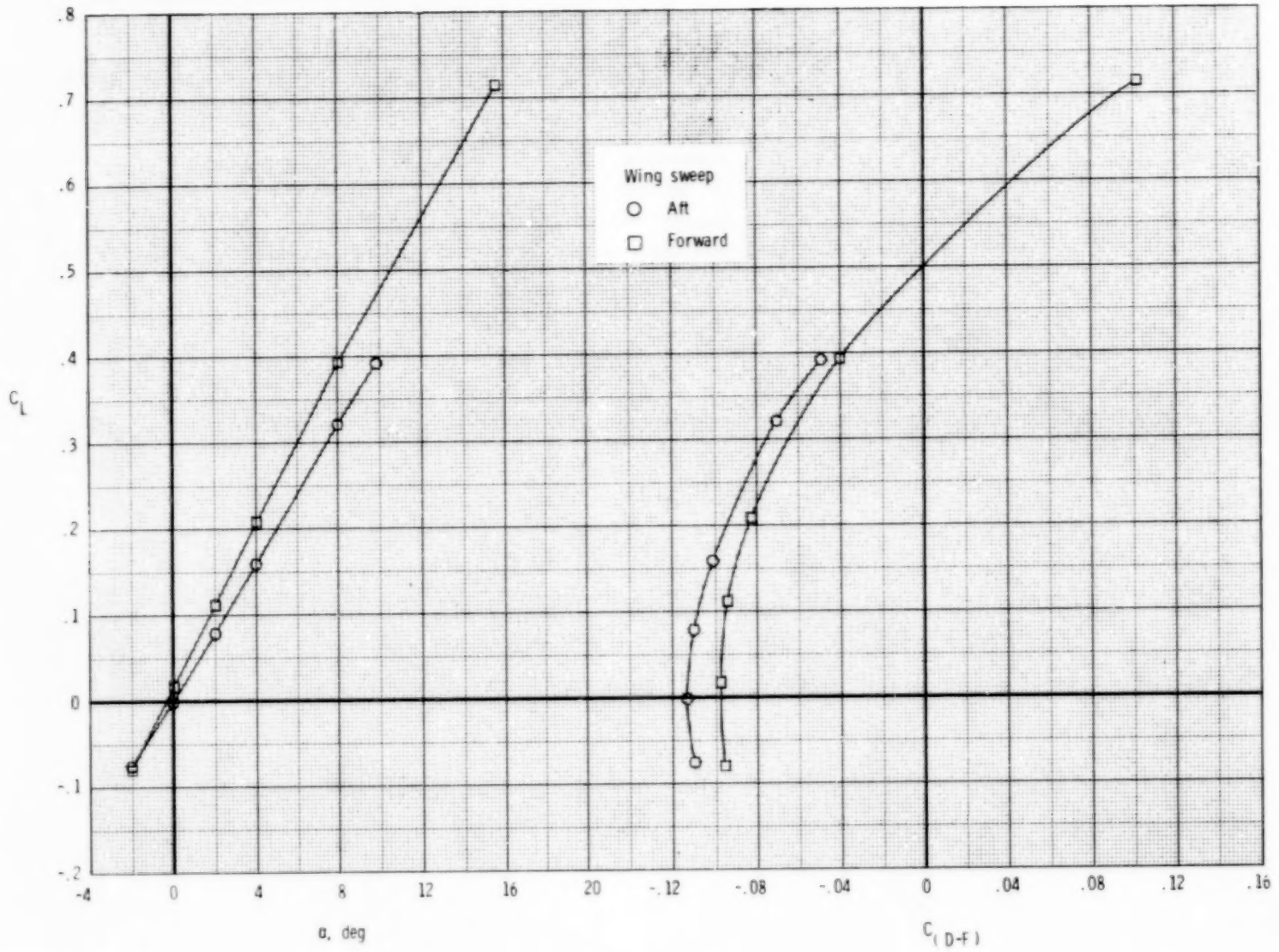
(b) $\delta_v = 10^o$.

Figure 35.- Continued.



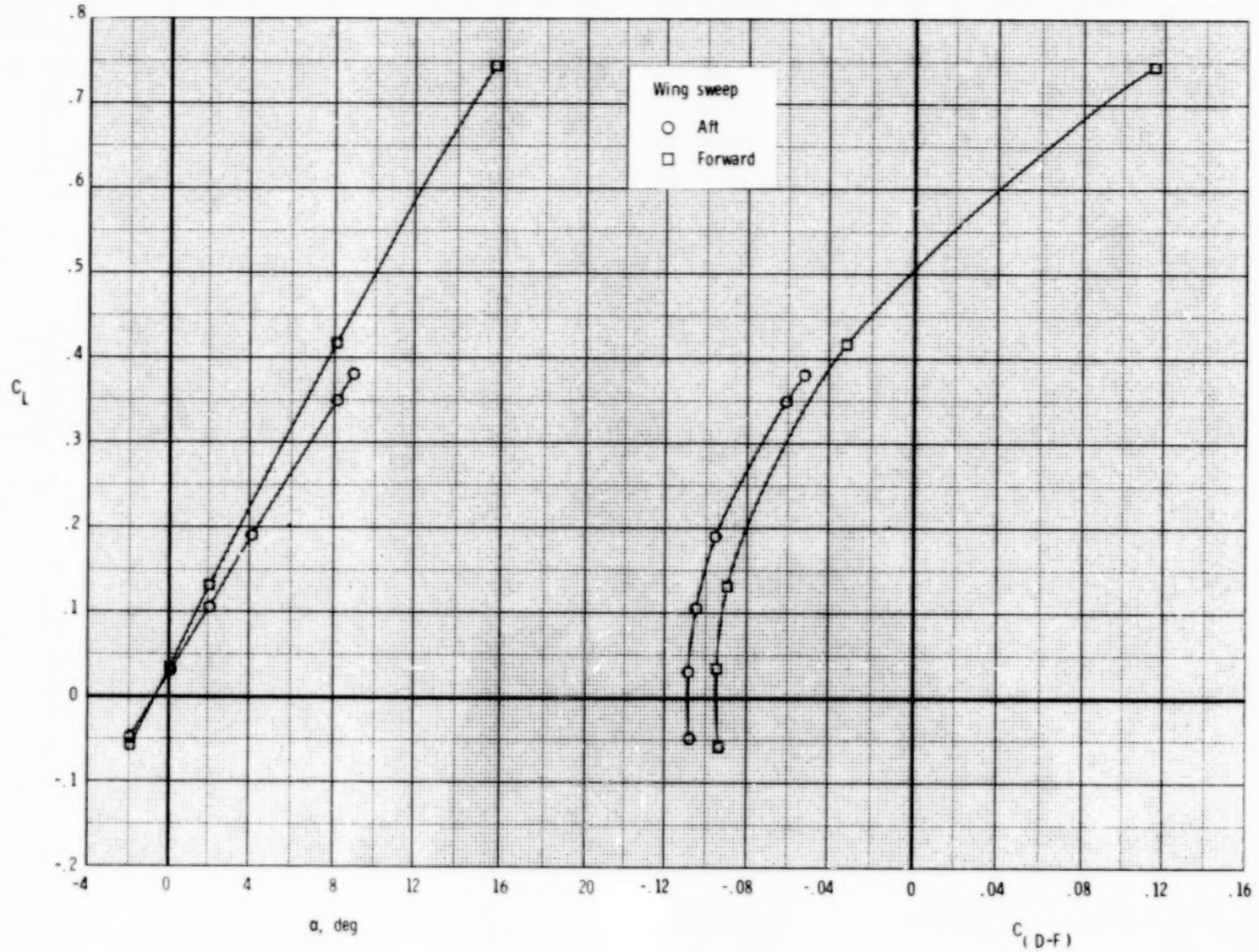
(c) $\delta_v = 20^o$.

Figure 35.- Concluded.



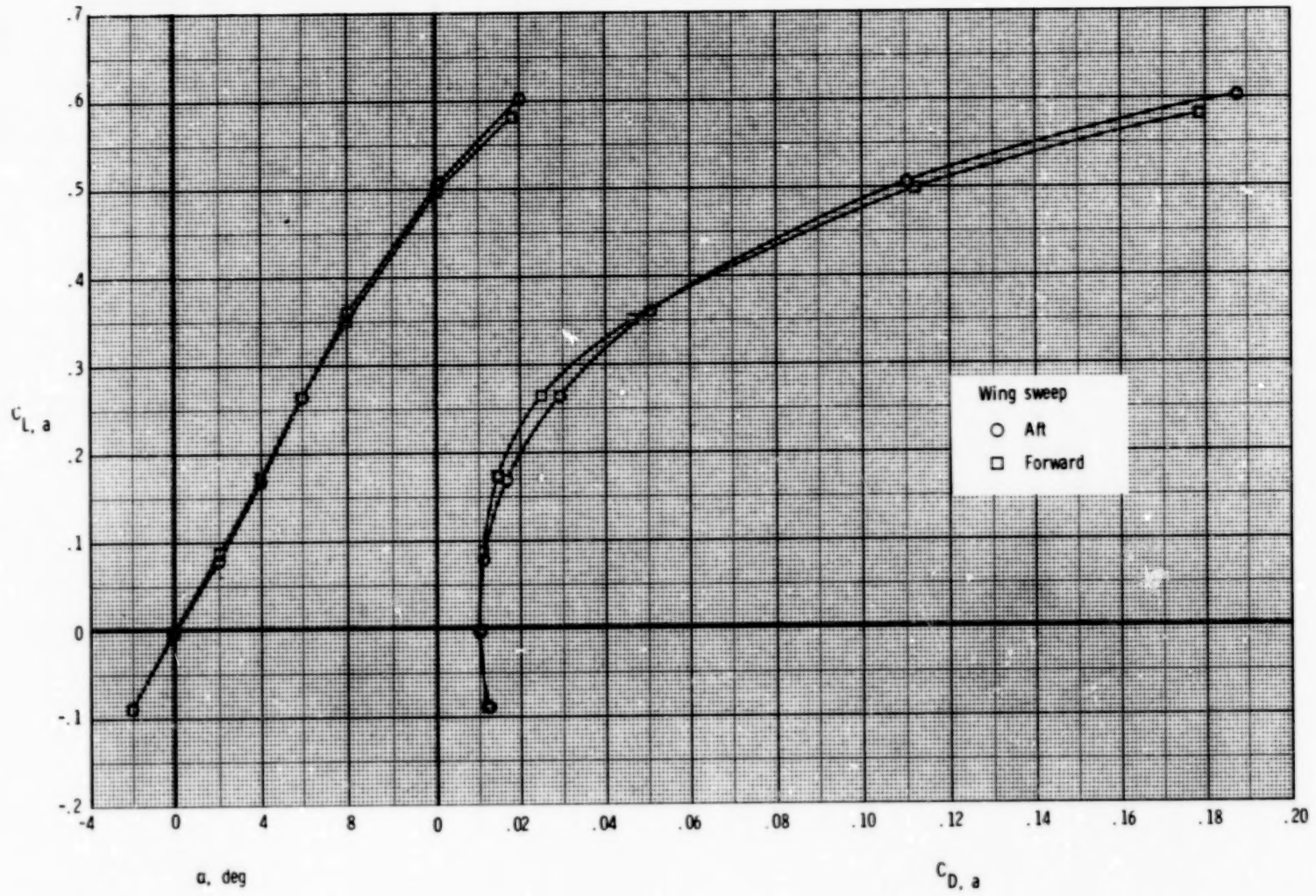
(a) $\delta_v = 0^o$.

Figure 36.- Effect of wing sweep on total aerodynamic characteristics. 2-D C-D nozzle, A/B power; M = 1.20; NPR = 7.0.



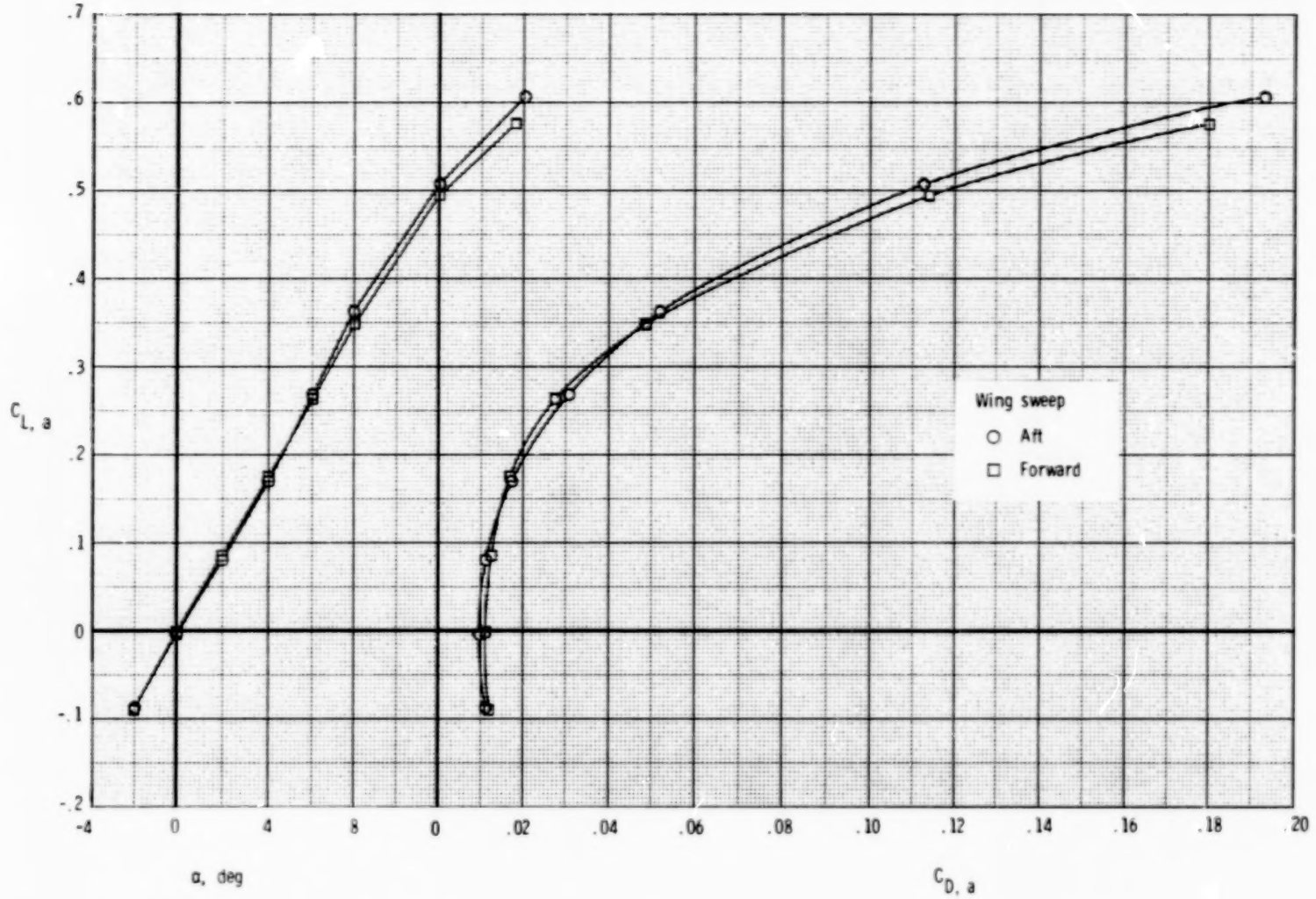
(b) $\delta_v = 10^\circ$.

Figure 36.- Concluded.



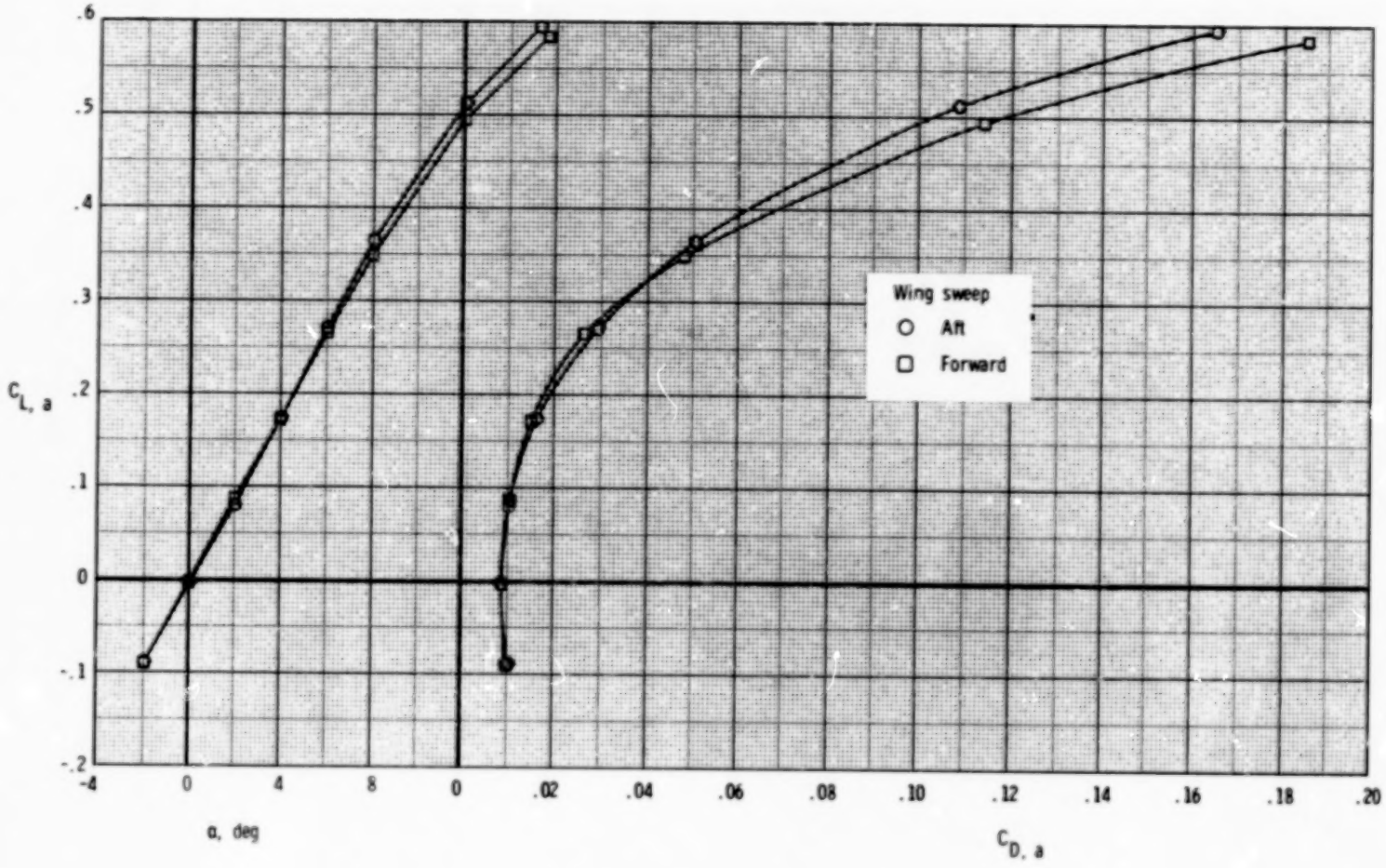
(a) $\delta_v = 0^o$.

Figure 37.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 0.60; NPR = 1.0.



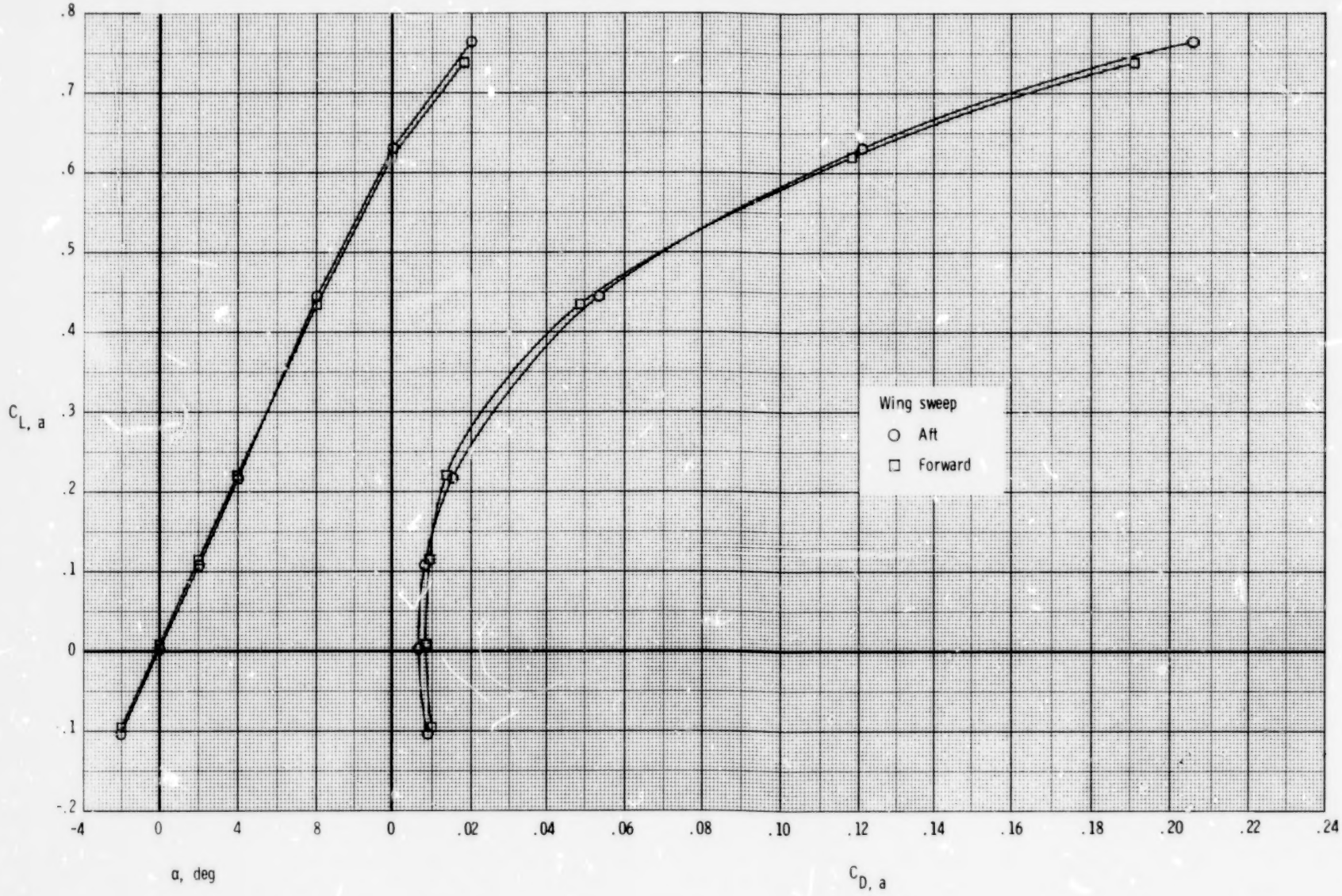
(b) $\delta_y = 10^o$.

Figure 37.- Continued.



(c) $\delta_v = 20^\circ$.

Figure 37.- Concluded.



(a) $\delta_v = 0°$.

Figure 38.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 0.60; NPR = 3.5.

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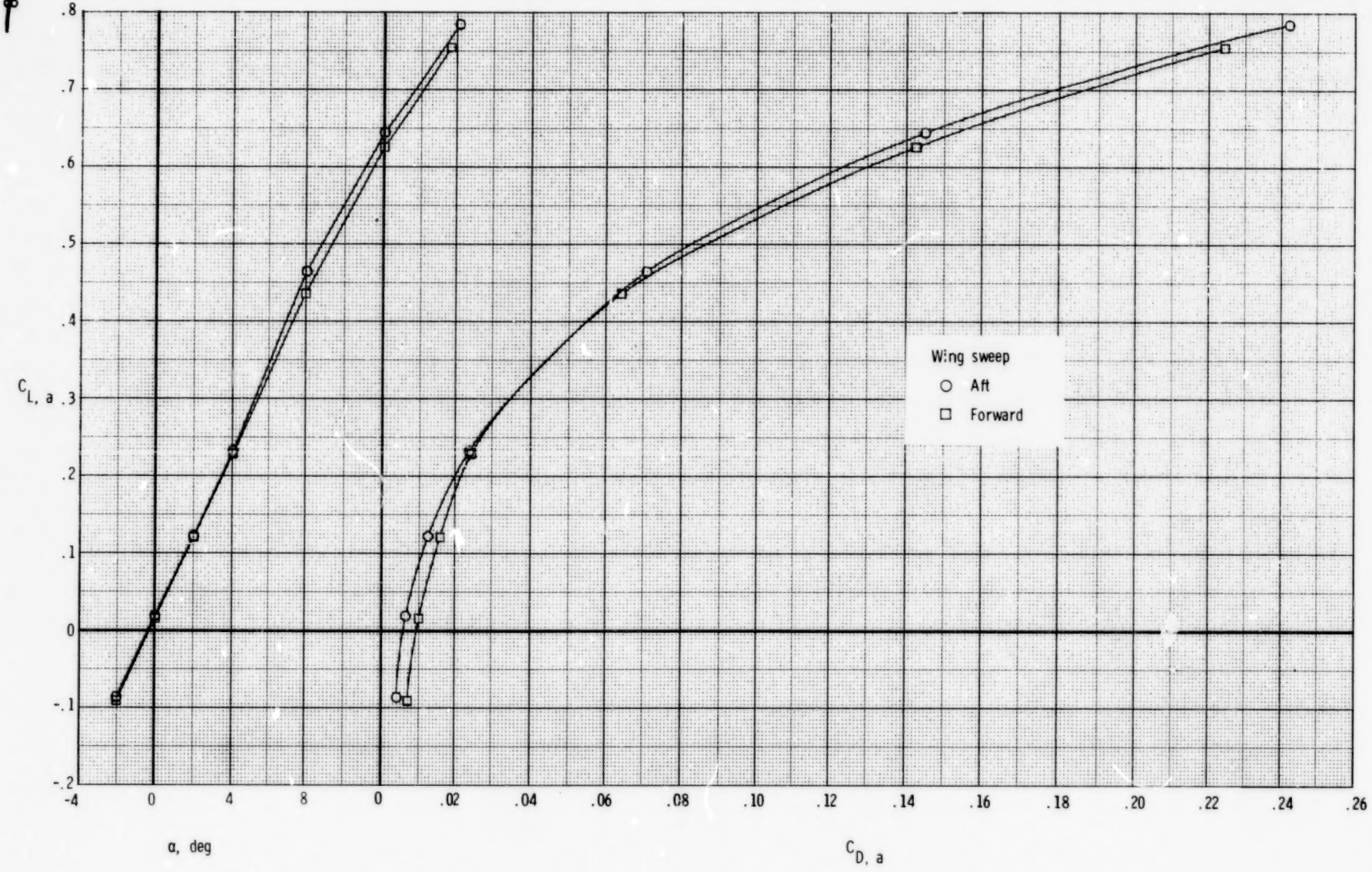
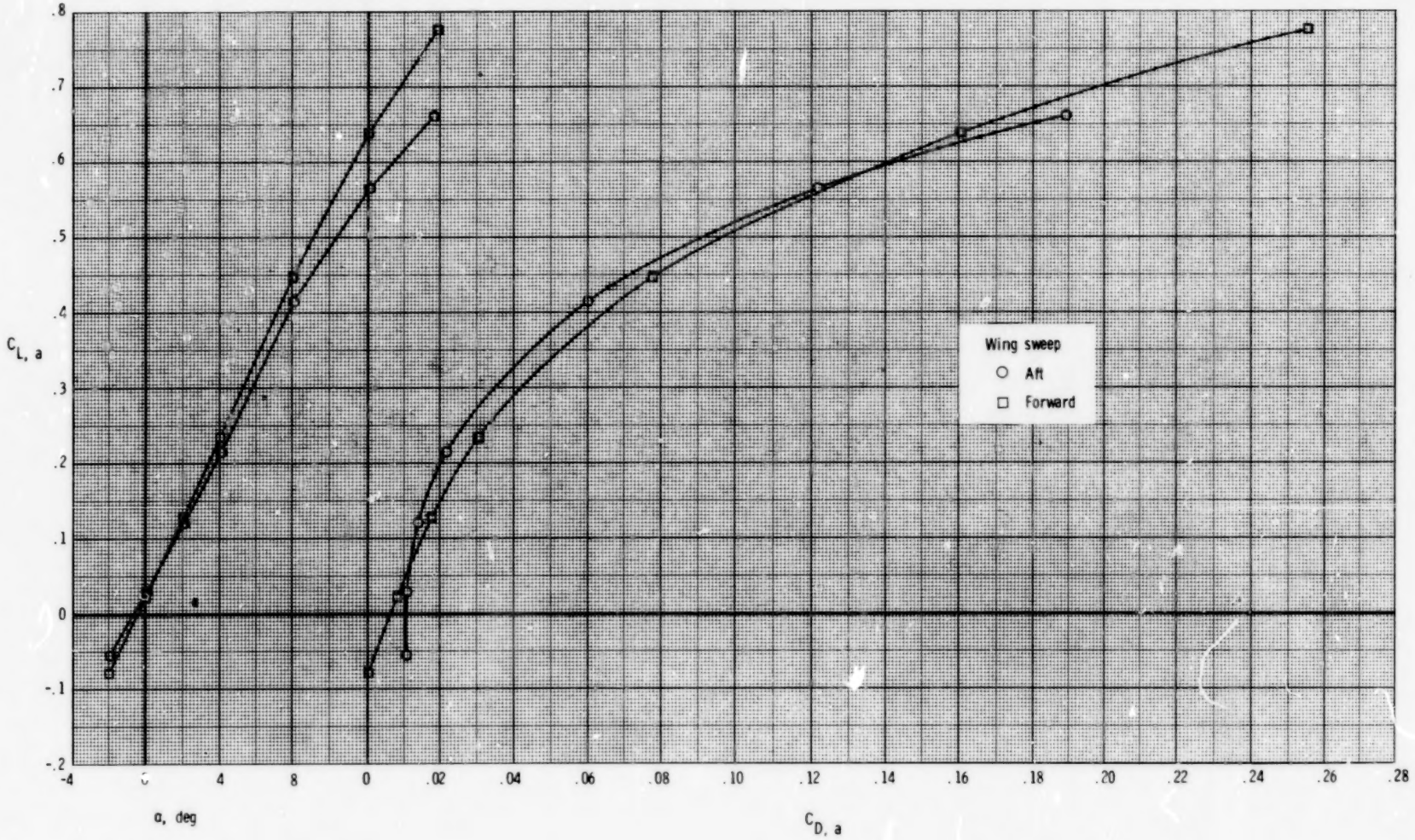


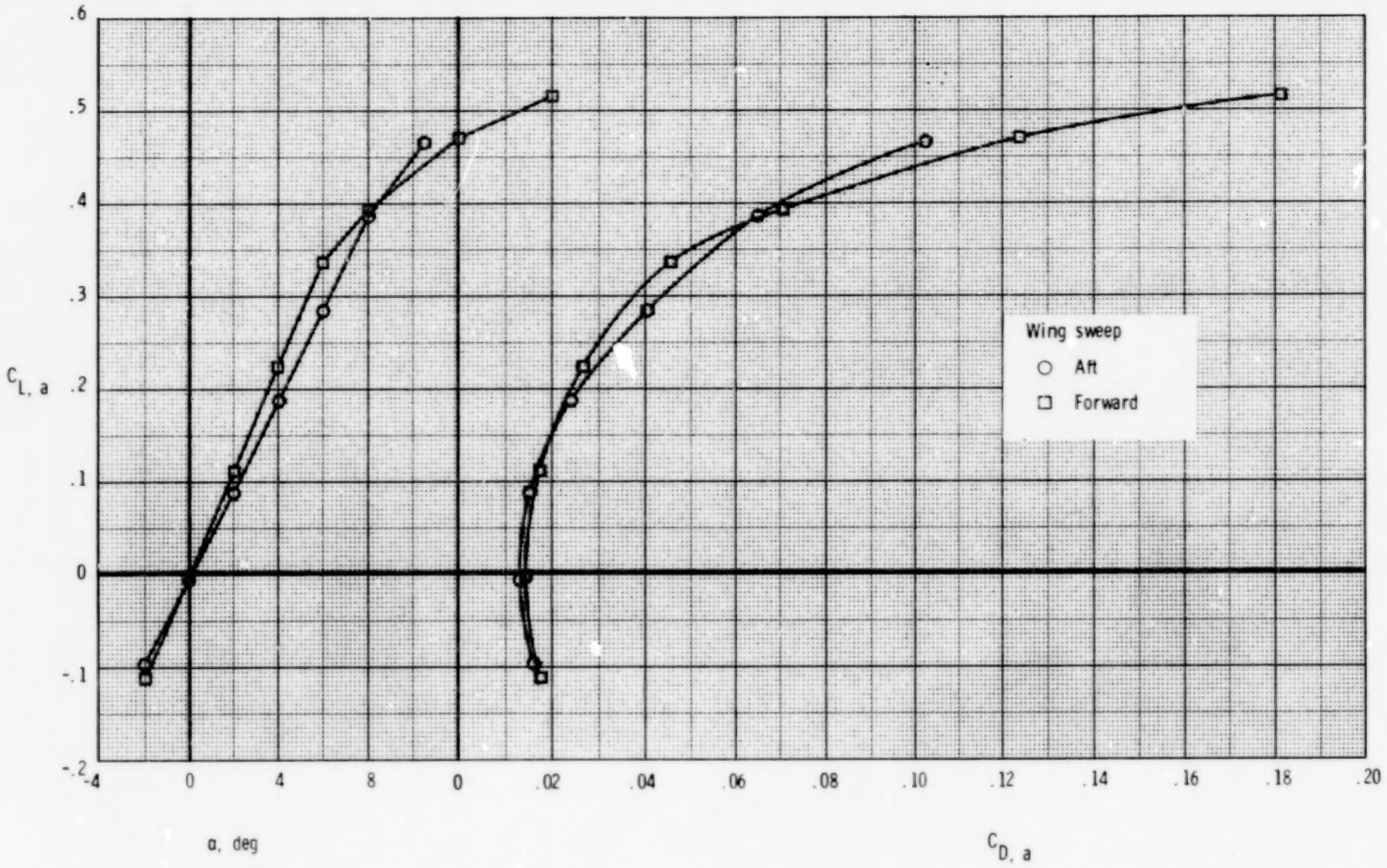
(b) $\delta_v = 10^o$.

Figure 38.- Continued.



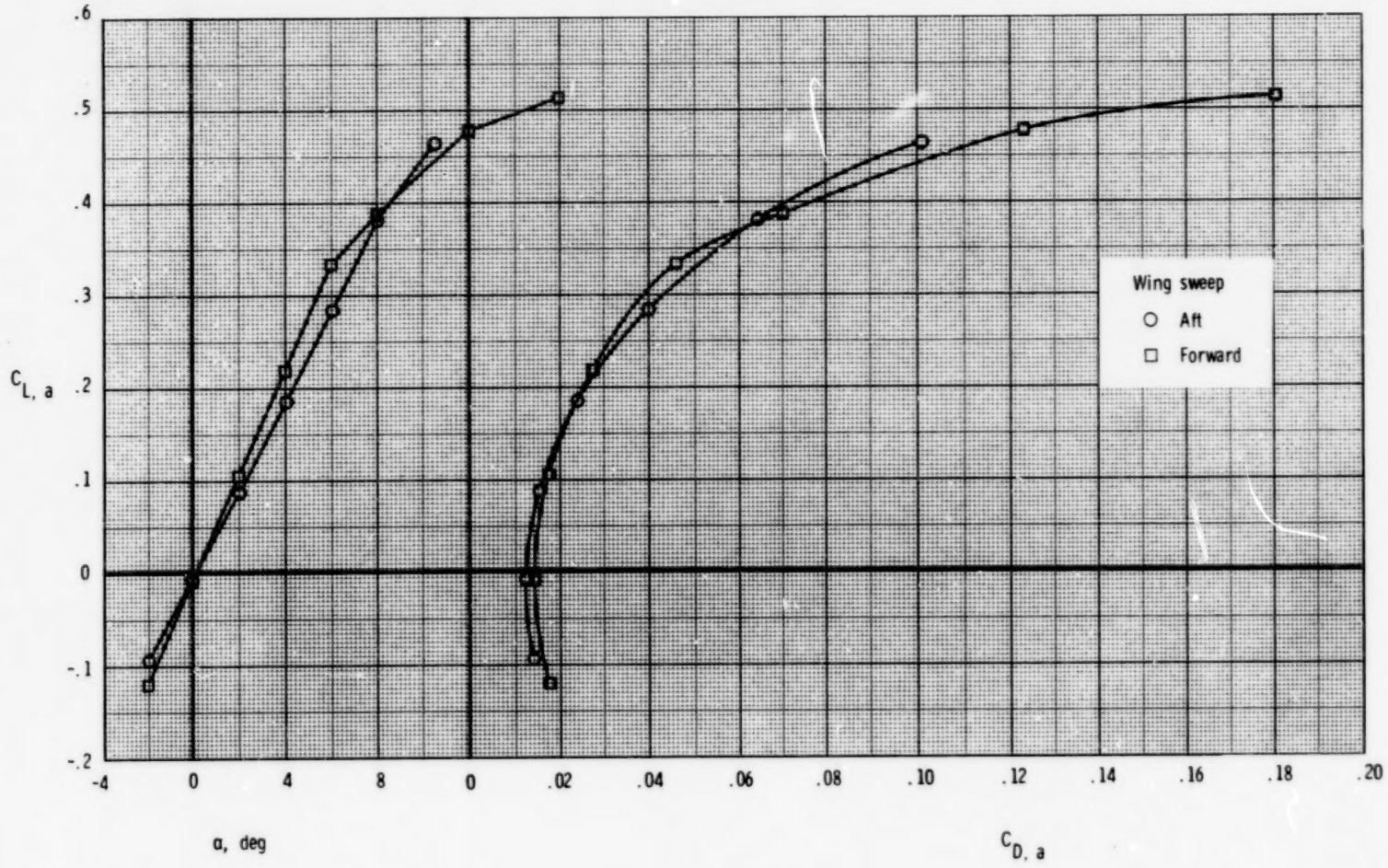
(c) $\delta_v = 20^o$.

Figure 38.- Concluded.



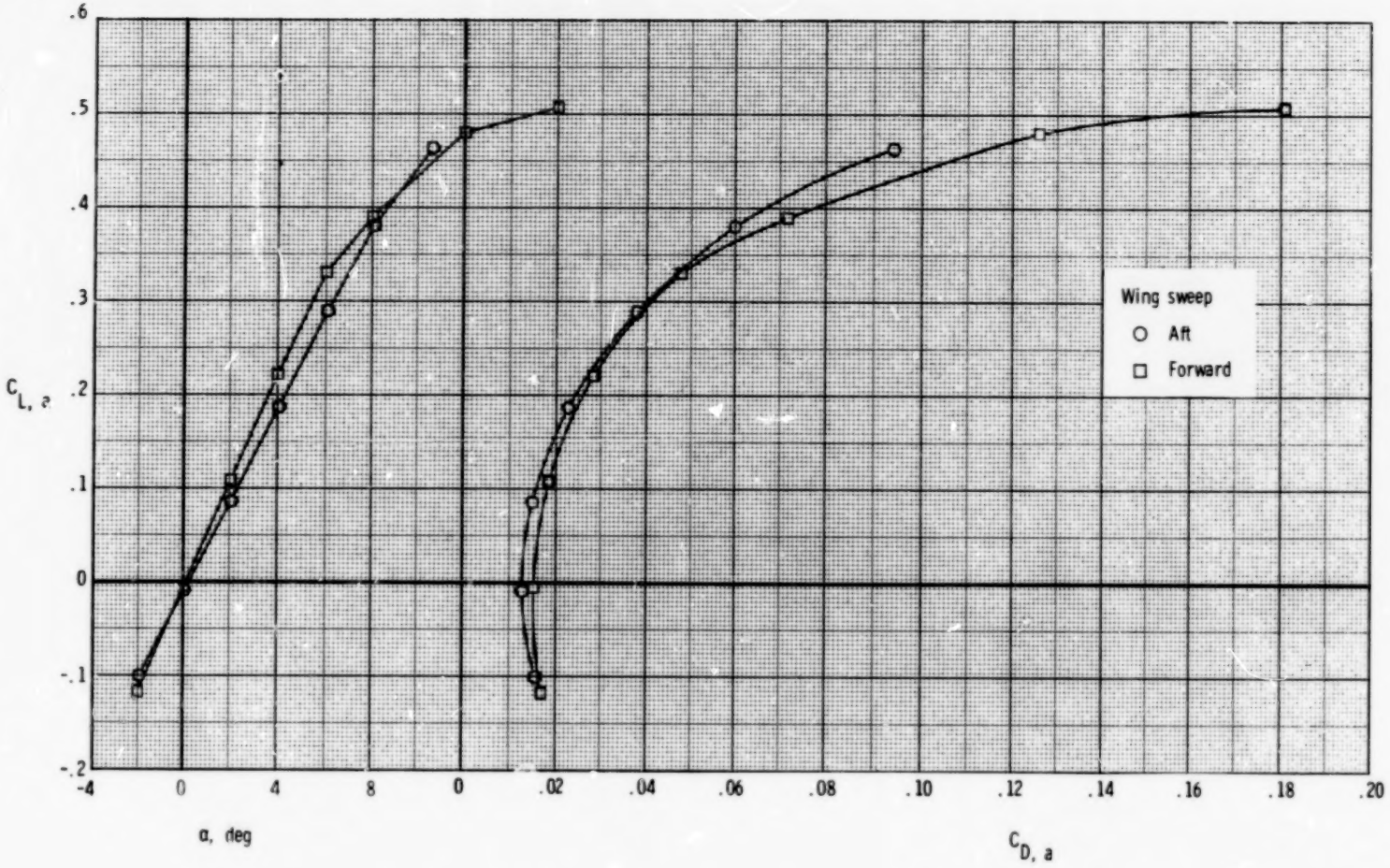
(a) $\delta_v = 0^o$.

Figure 39.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 1.0.



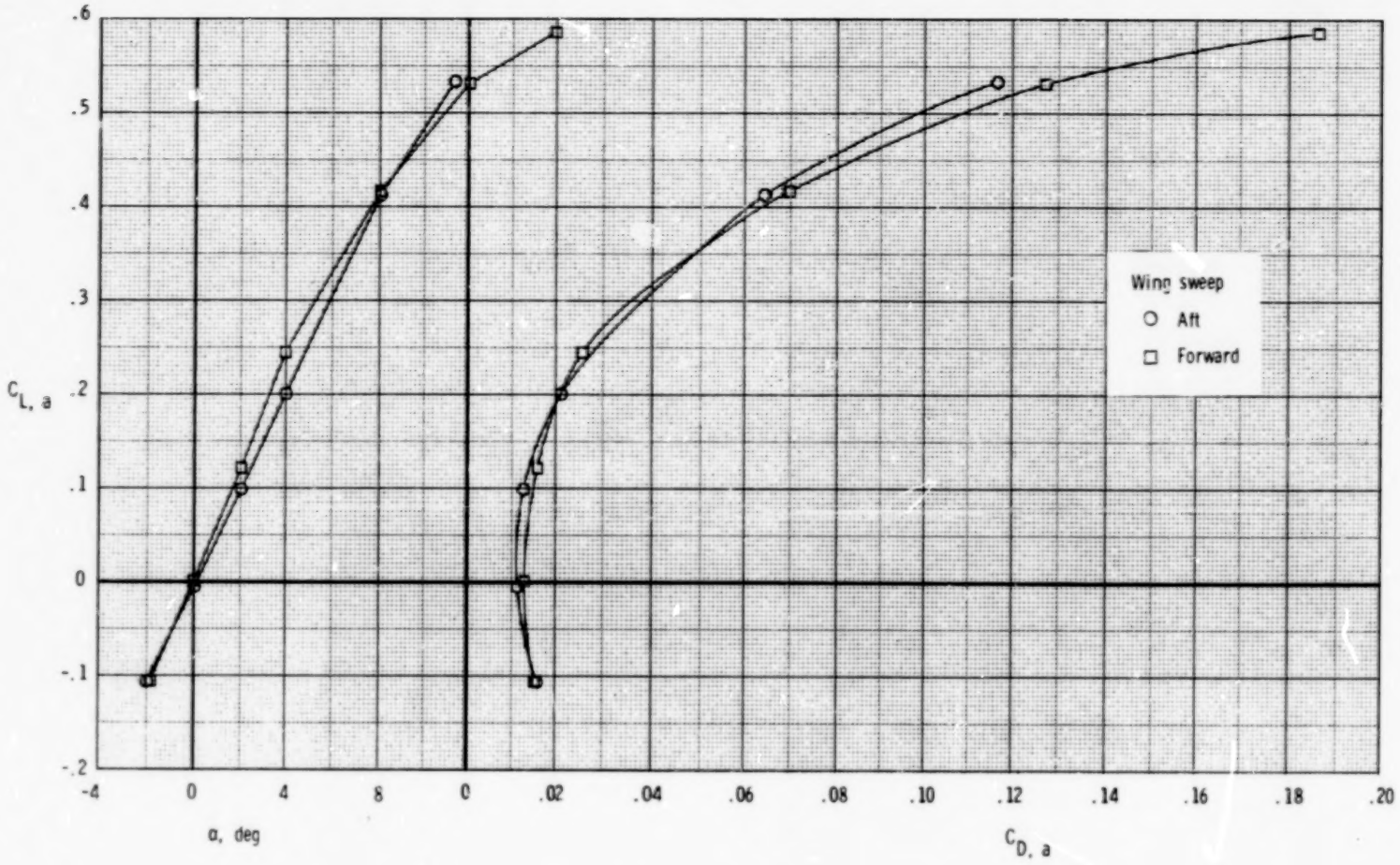
(b) $\delta_v = 10^o$.

Figure 39.- Continued.



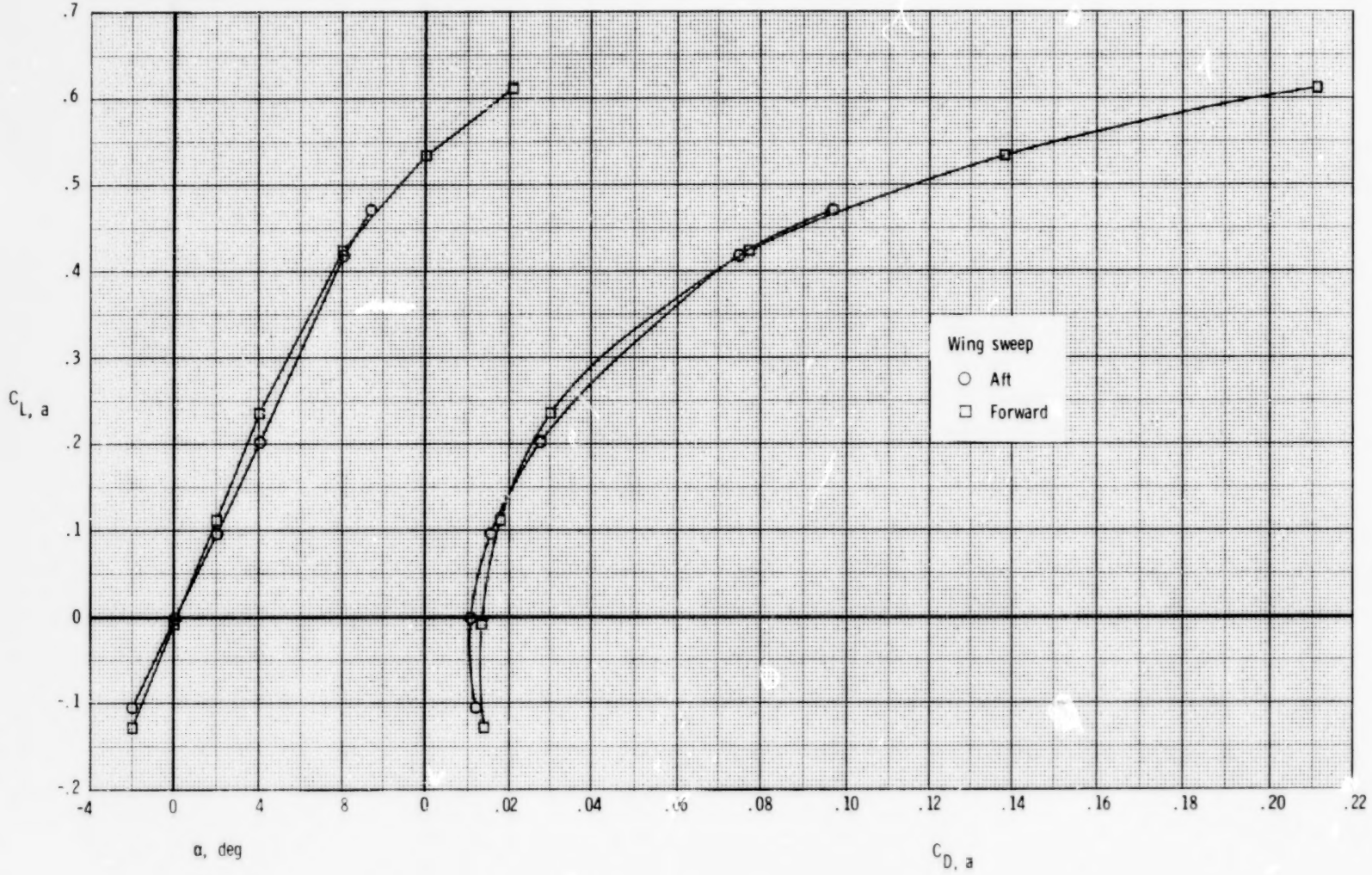
(c) $\delta_v = 20^\circ$.

Figure 39.- Concluded.



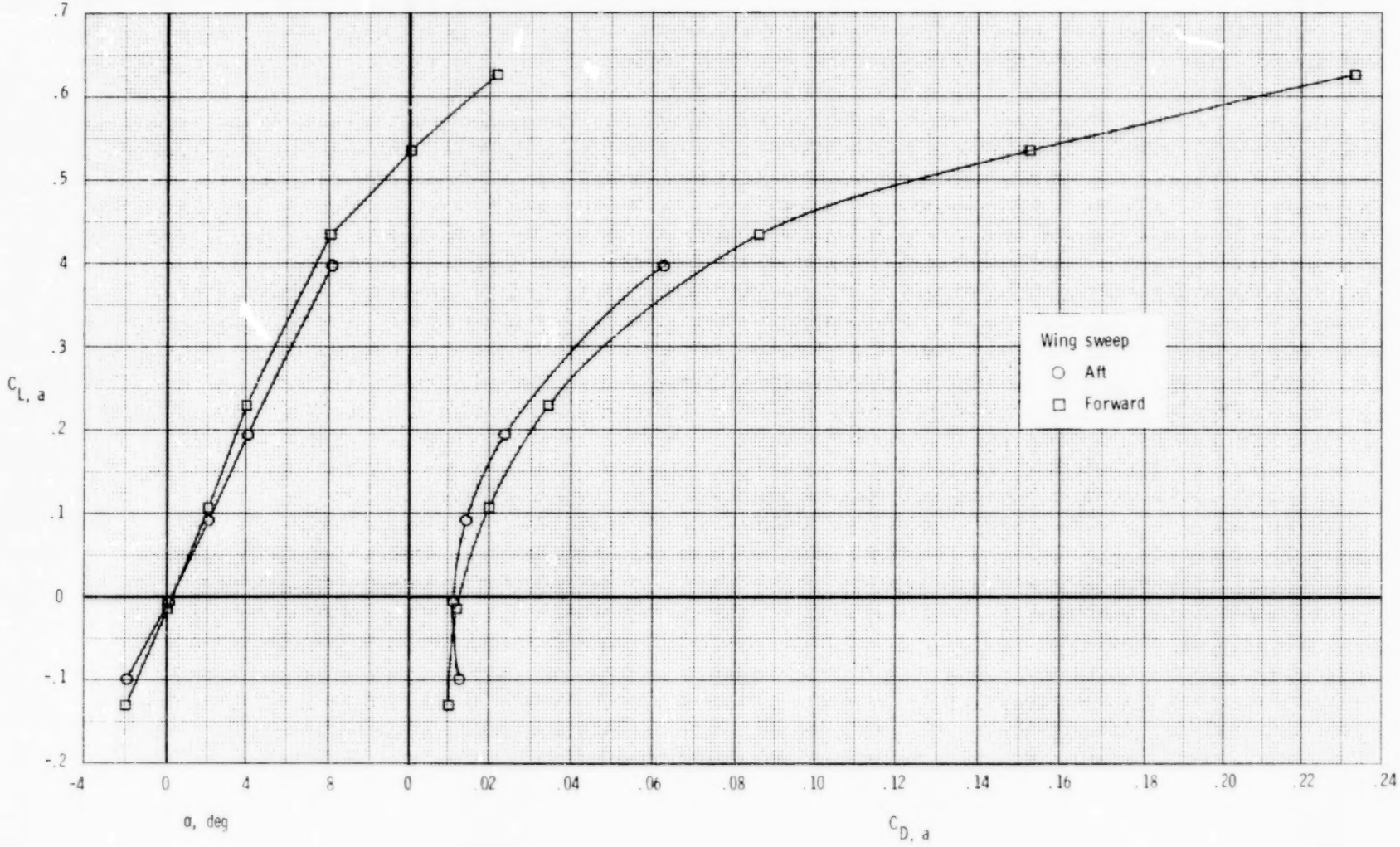
(a) $\delta_v = 0^o$.

Figure 40.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 3.5.



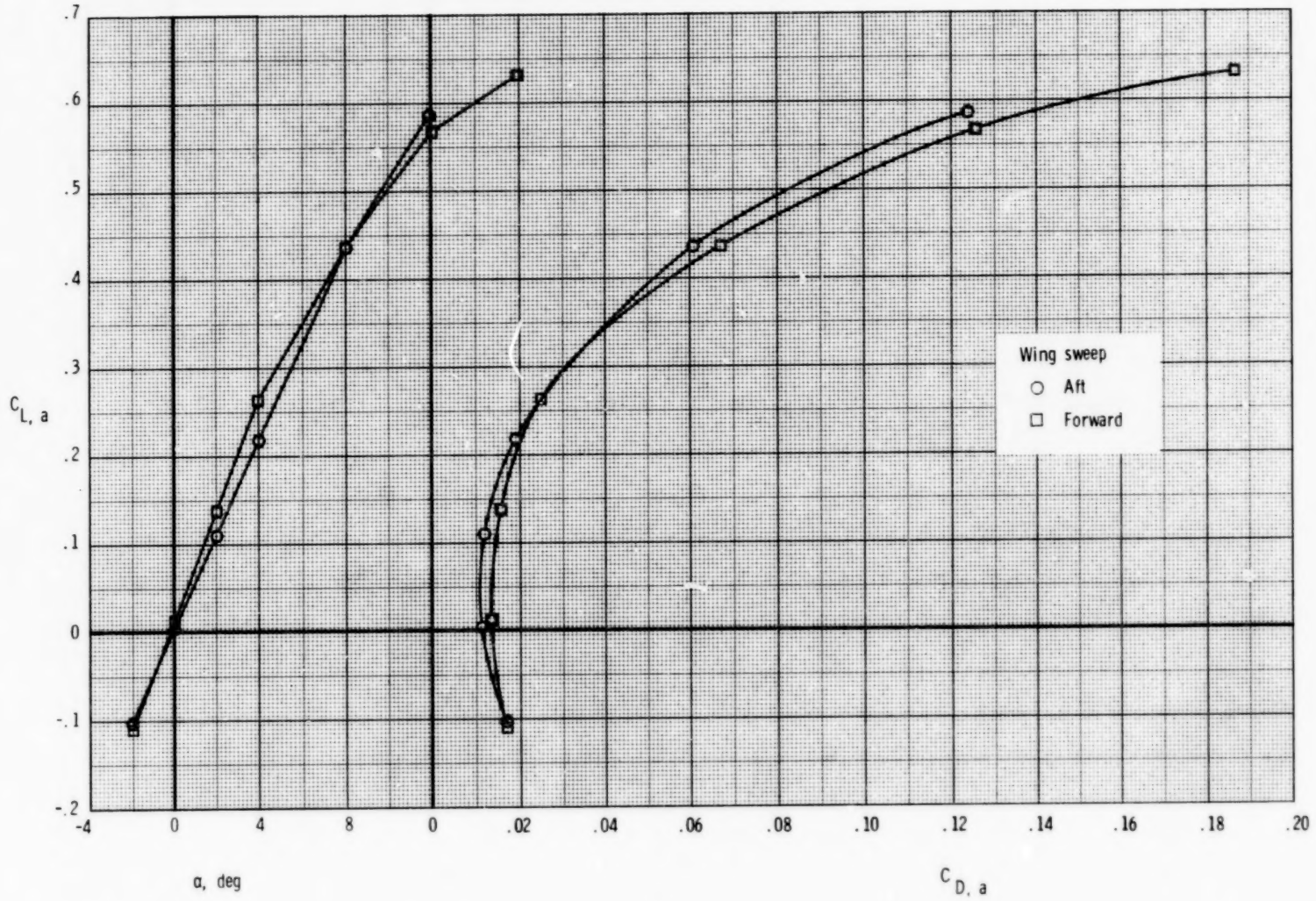
(b) $\delta_v = 10^o$.

Figure 40.- Continued.



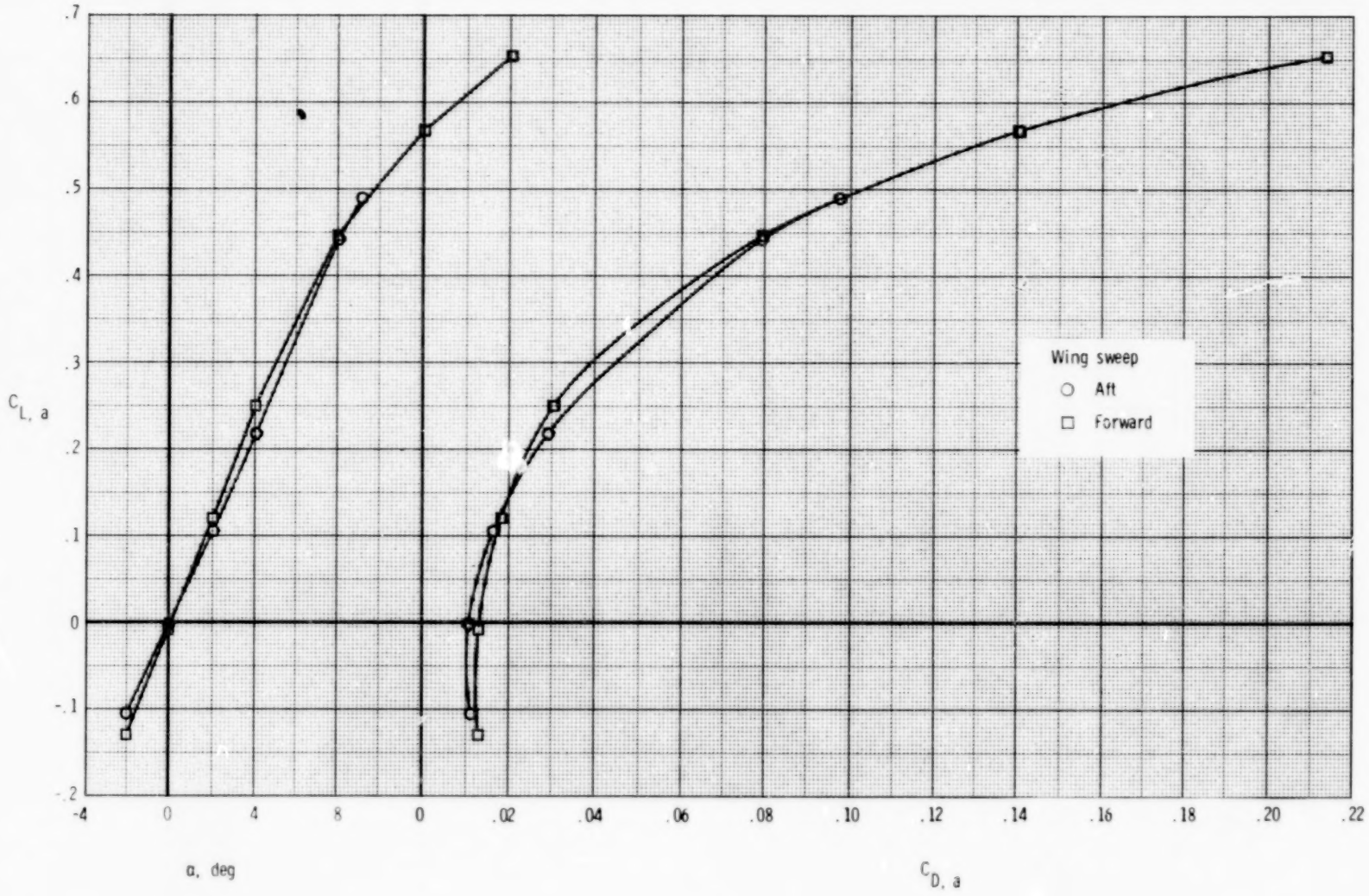
(c) $\delta_v = 20^o$.

Figure 40.- Concluded.



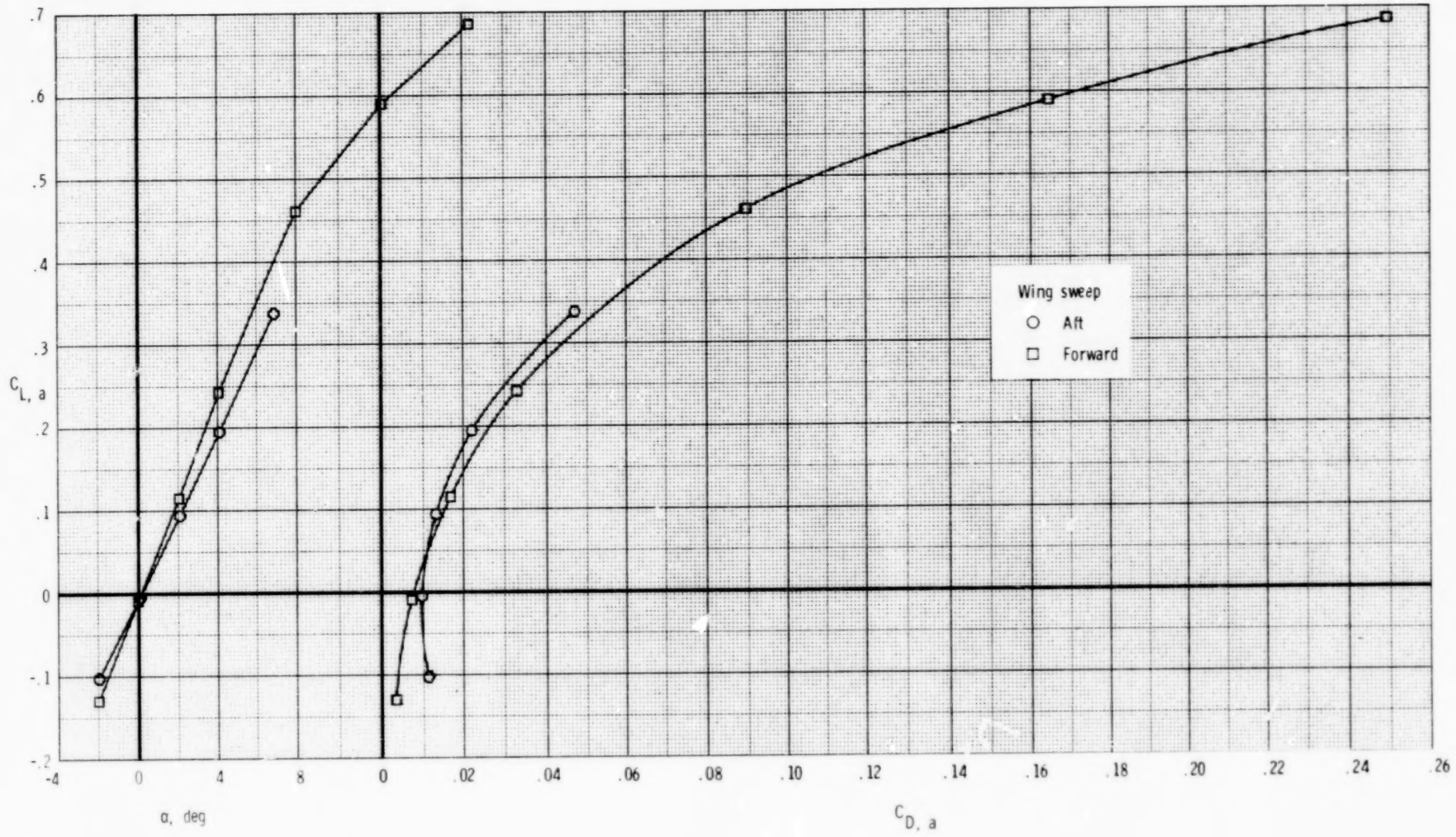
(a) $\delta_v = 0^o$.

Figure 41.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 0.90; NPR = 5.0.



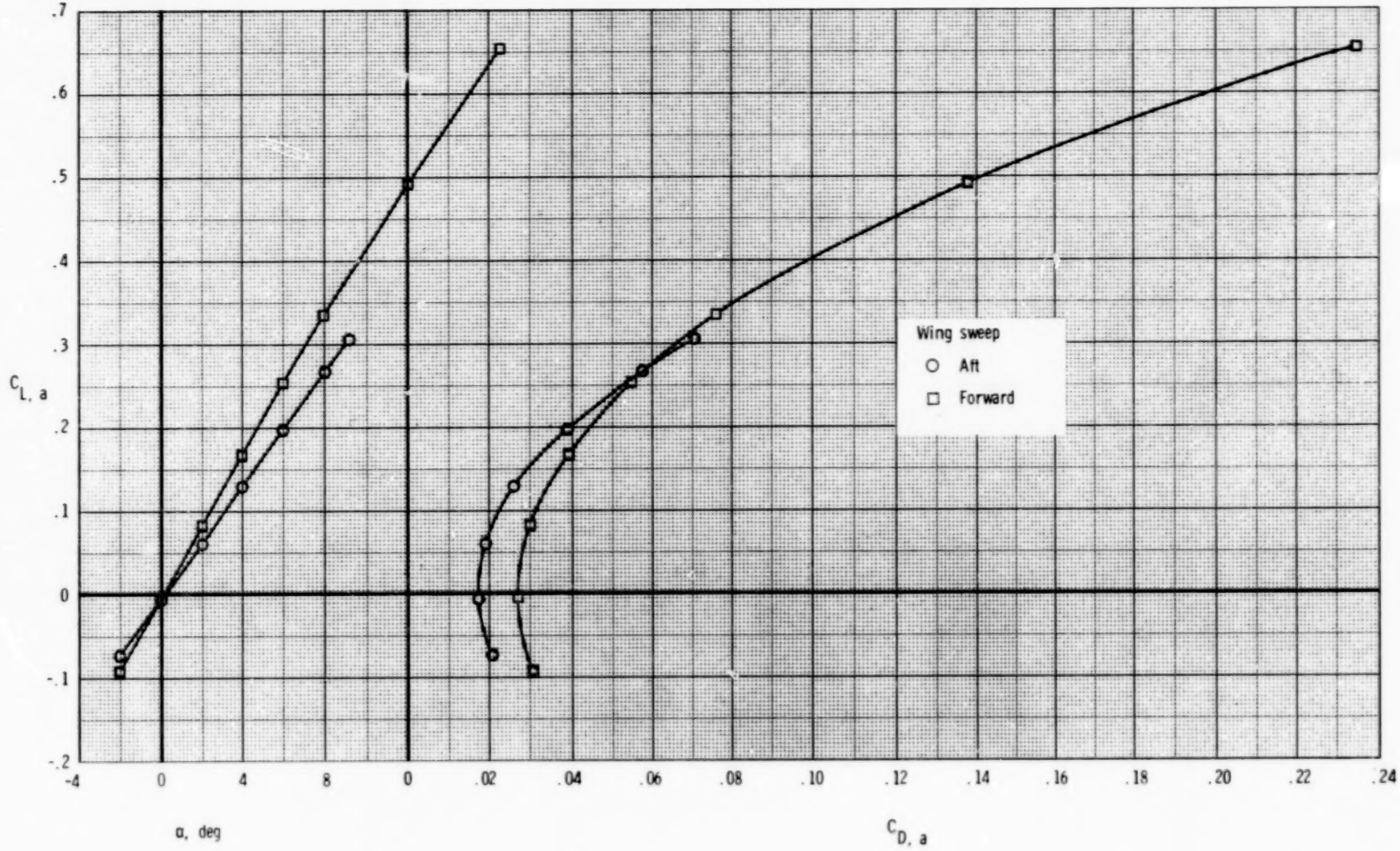
(b) $\delta_v = 10^o$.

Figure 41.- Continued.



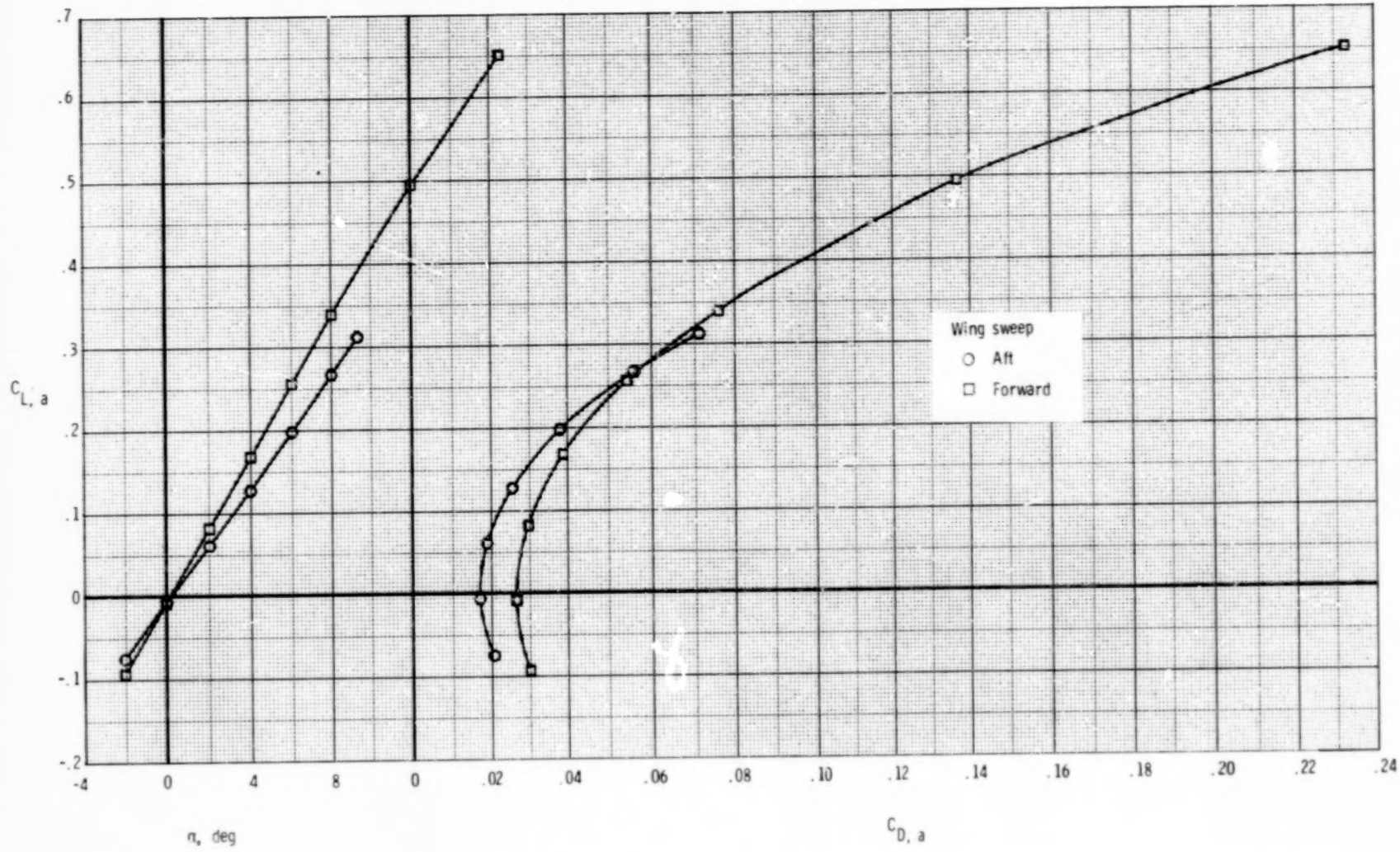
(c) $\delta_v = 20°$.

Figure 41.- Concluded.



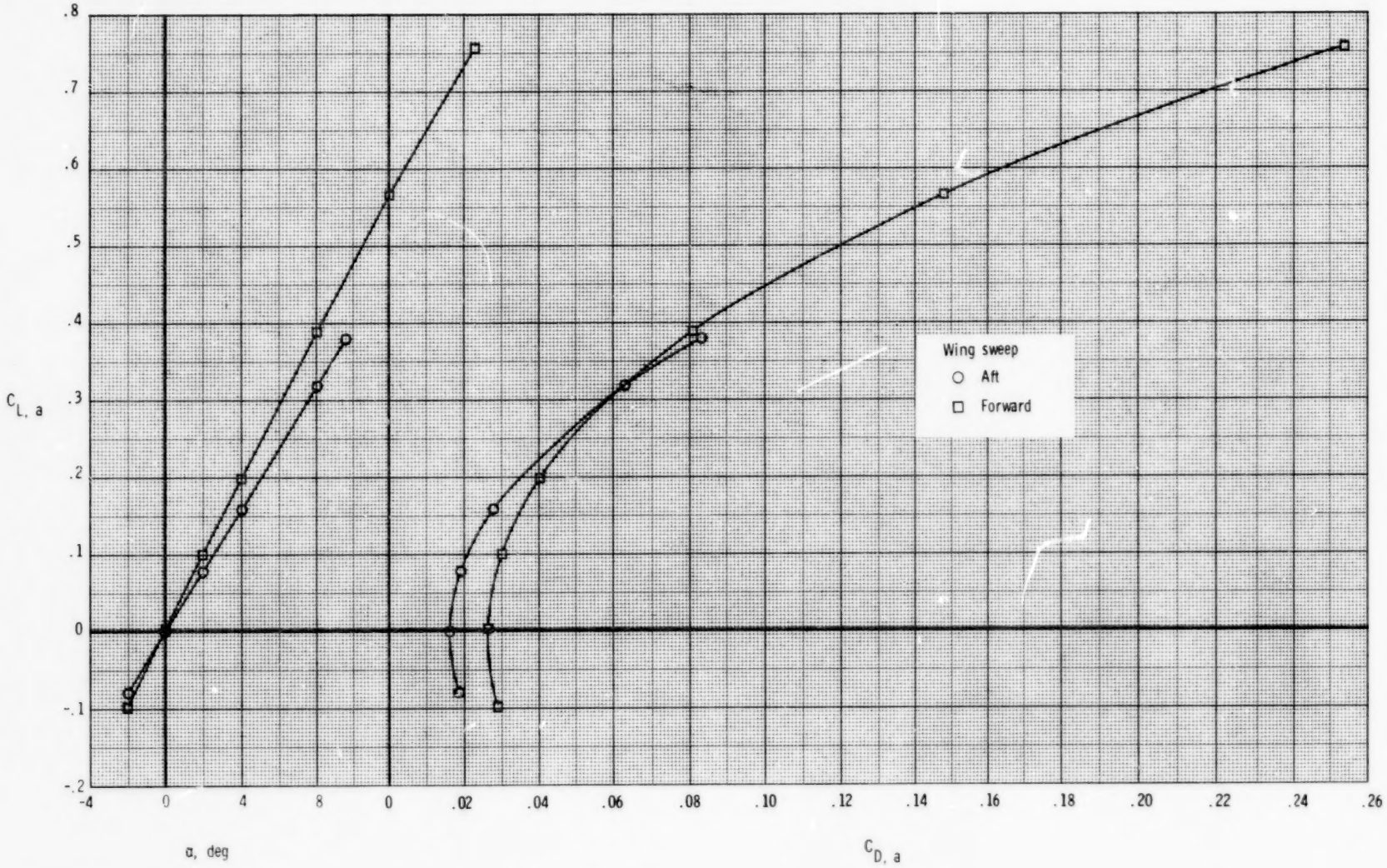
(a) $\delta_v = 0^o$.

Figure 42.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 1.20; NPR = 1.0.



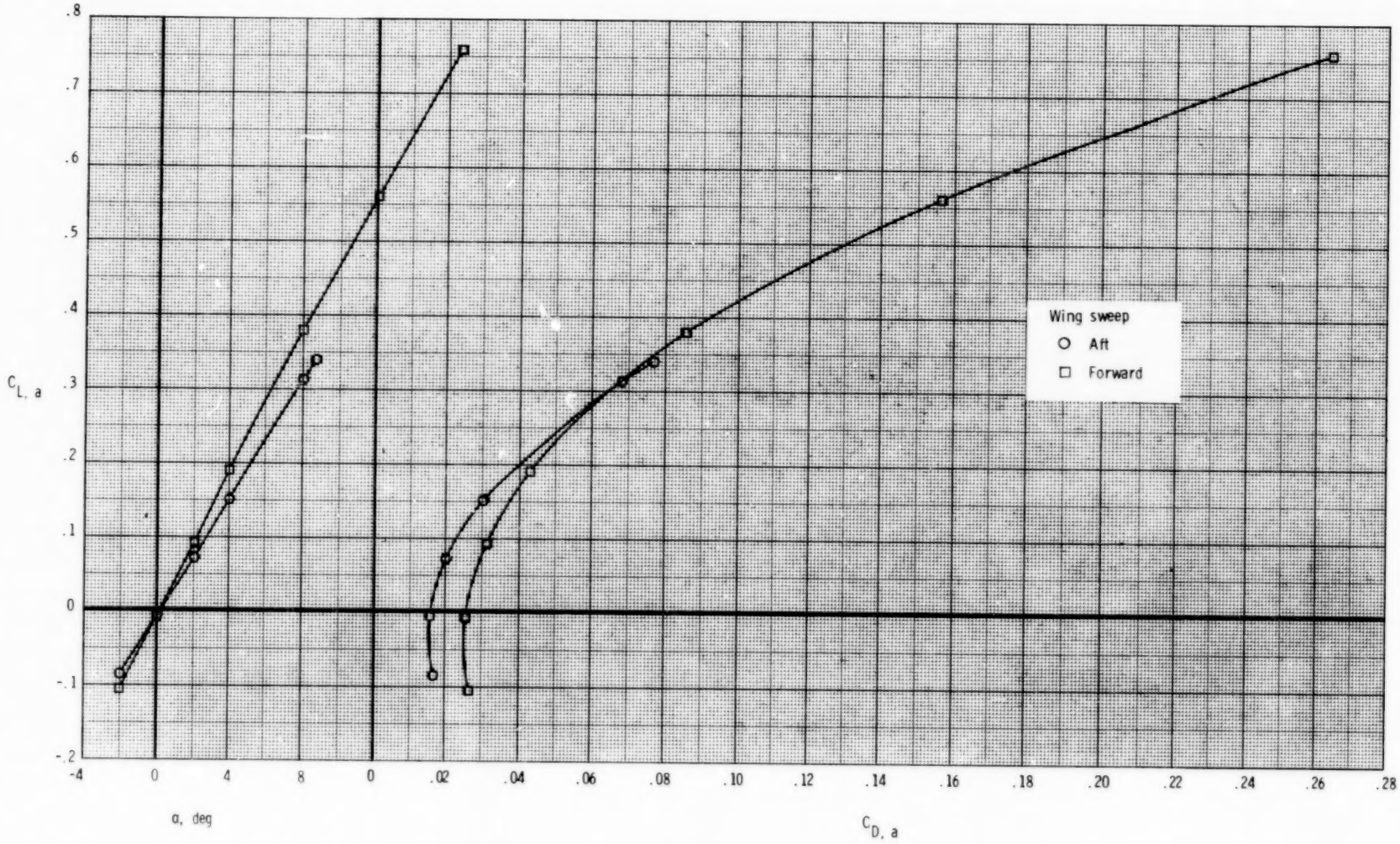
(b) $\delta_v = 10^o$.

Figure 42.- Concluded.



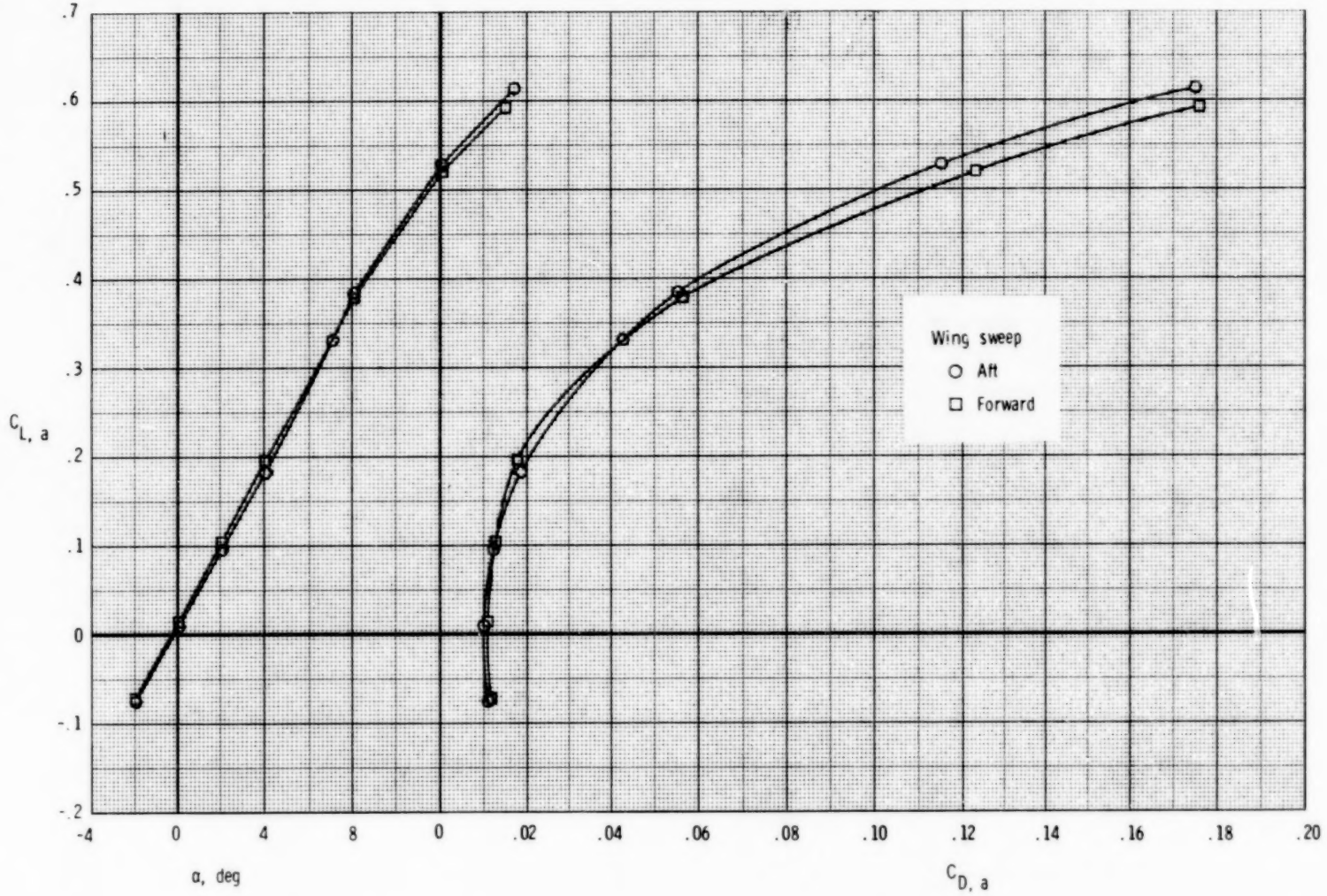
(a) $\delta_v = 0^\circ$.

Figure 43.- Effect of wing sweep on thrust-removed aerodynamic characteristics. Upright SERN, A/B power; M = 1.20; NPR = 7.0.



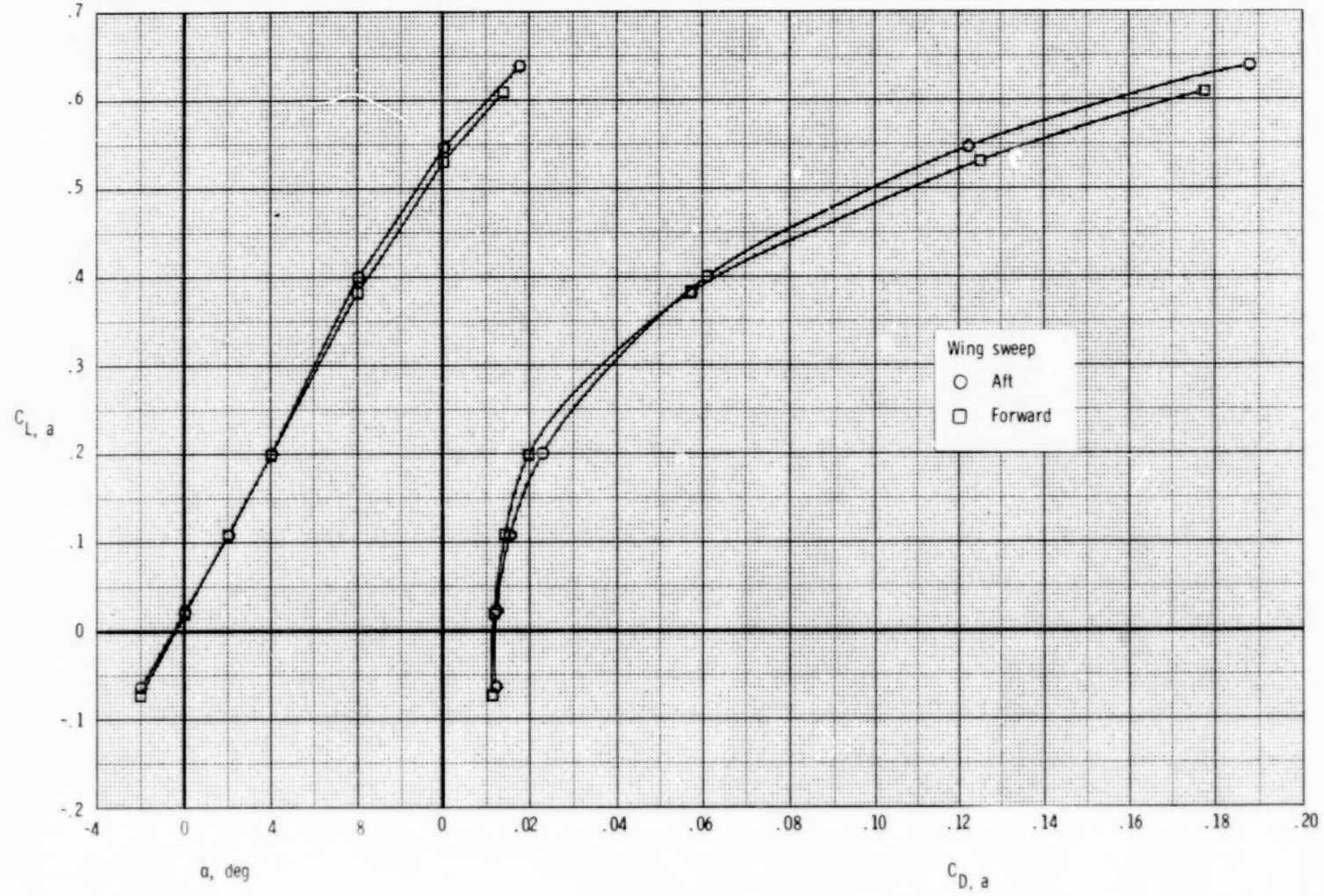
(b) $\delta_v = 10^o$.

Figure 43.- Concluded.



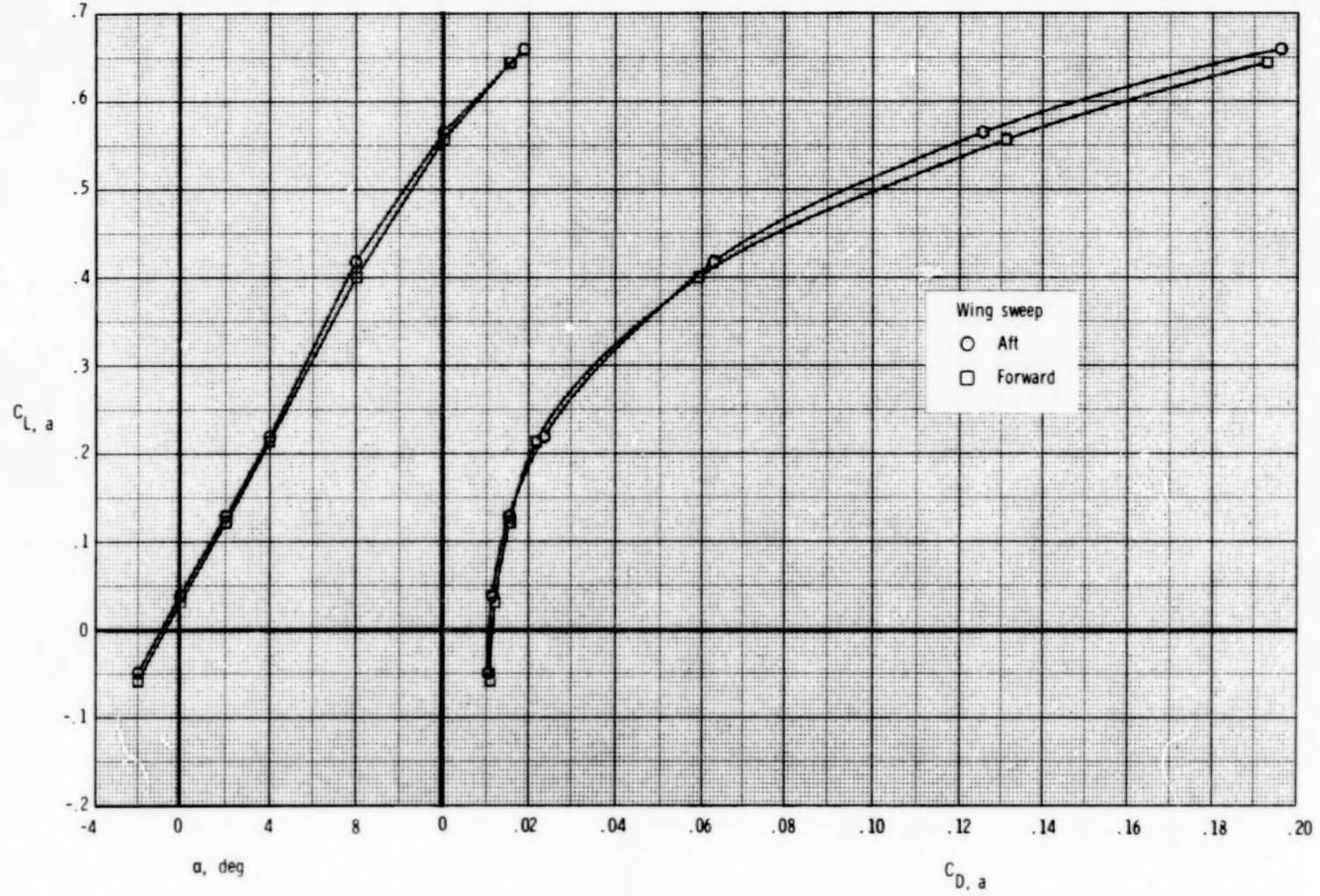
(a) $\delta_v = 0^o$.

Figure 44.- Effect of wing sweep on thrust-removed aerodynamic characteristics. 2-D C-D nozzle. A/B power; M = 0.60; NPR 3.5.



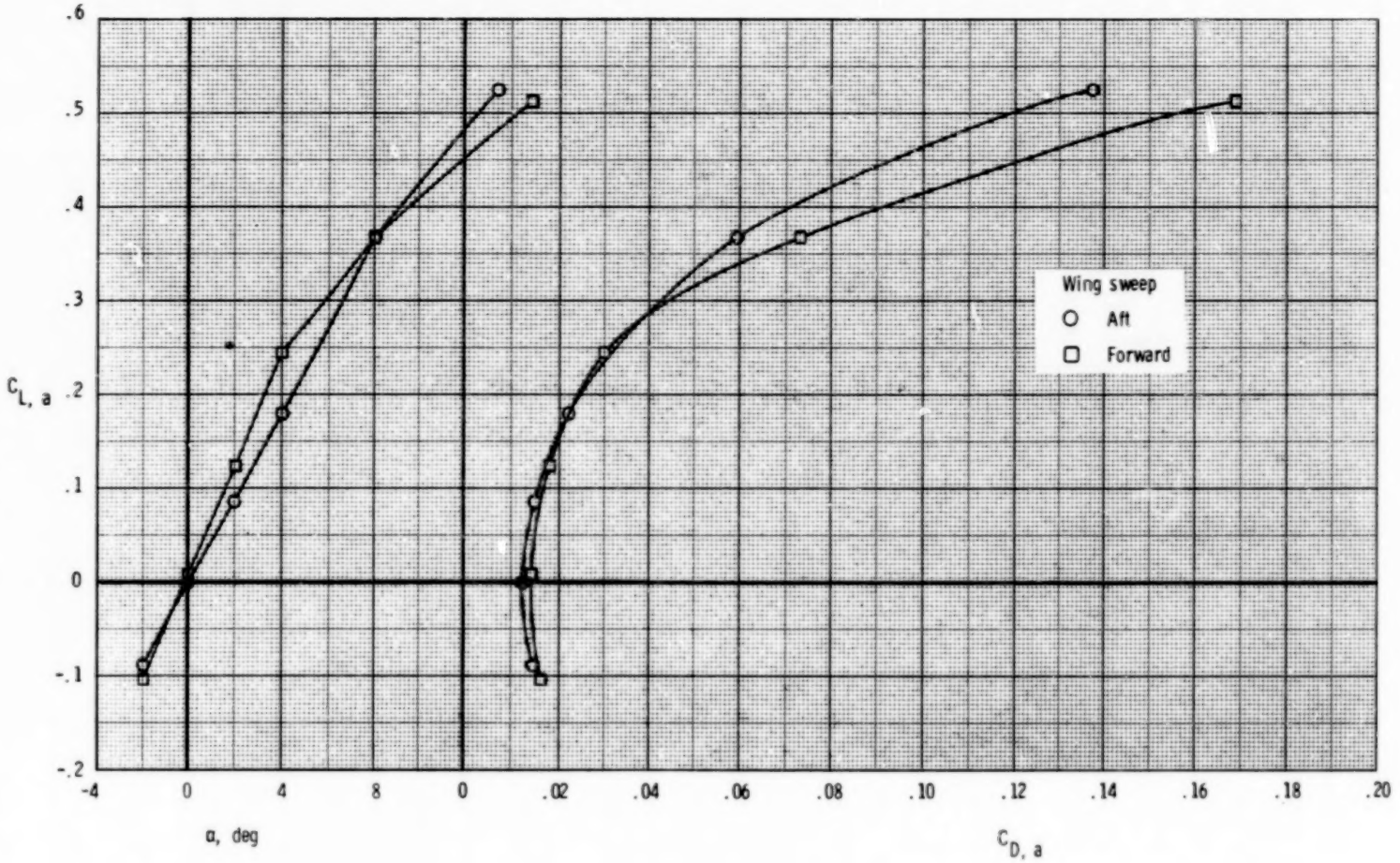
(b) $\delta_v = 10^o$.

Figure 44.- Continued.



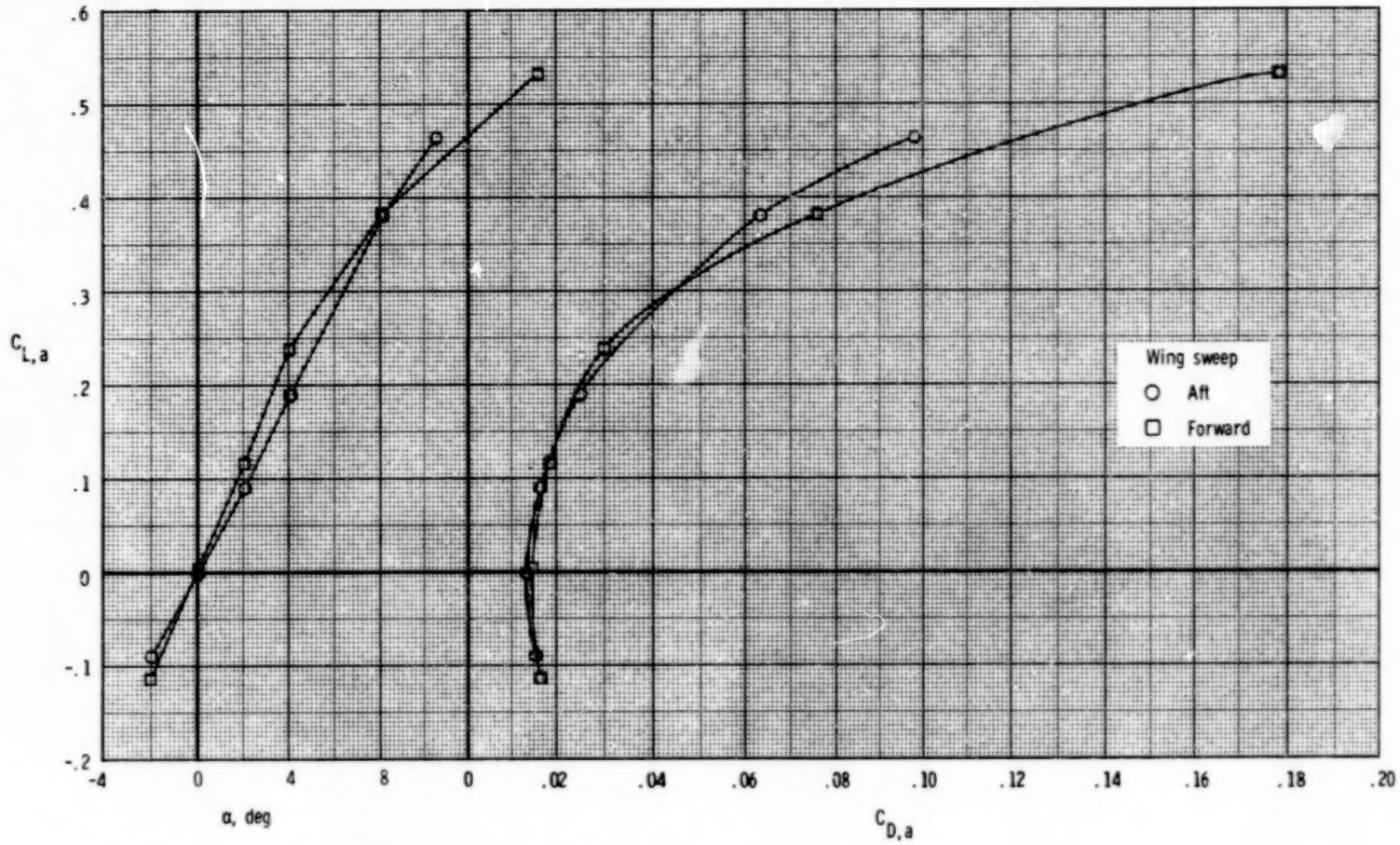
(c) $\delta_v = 20^o$.

Figure 44.- Concluded.



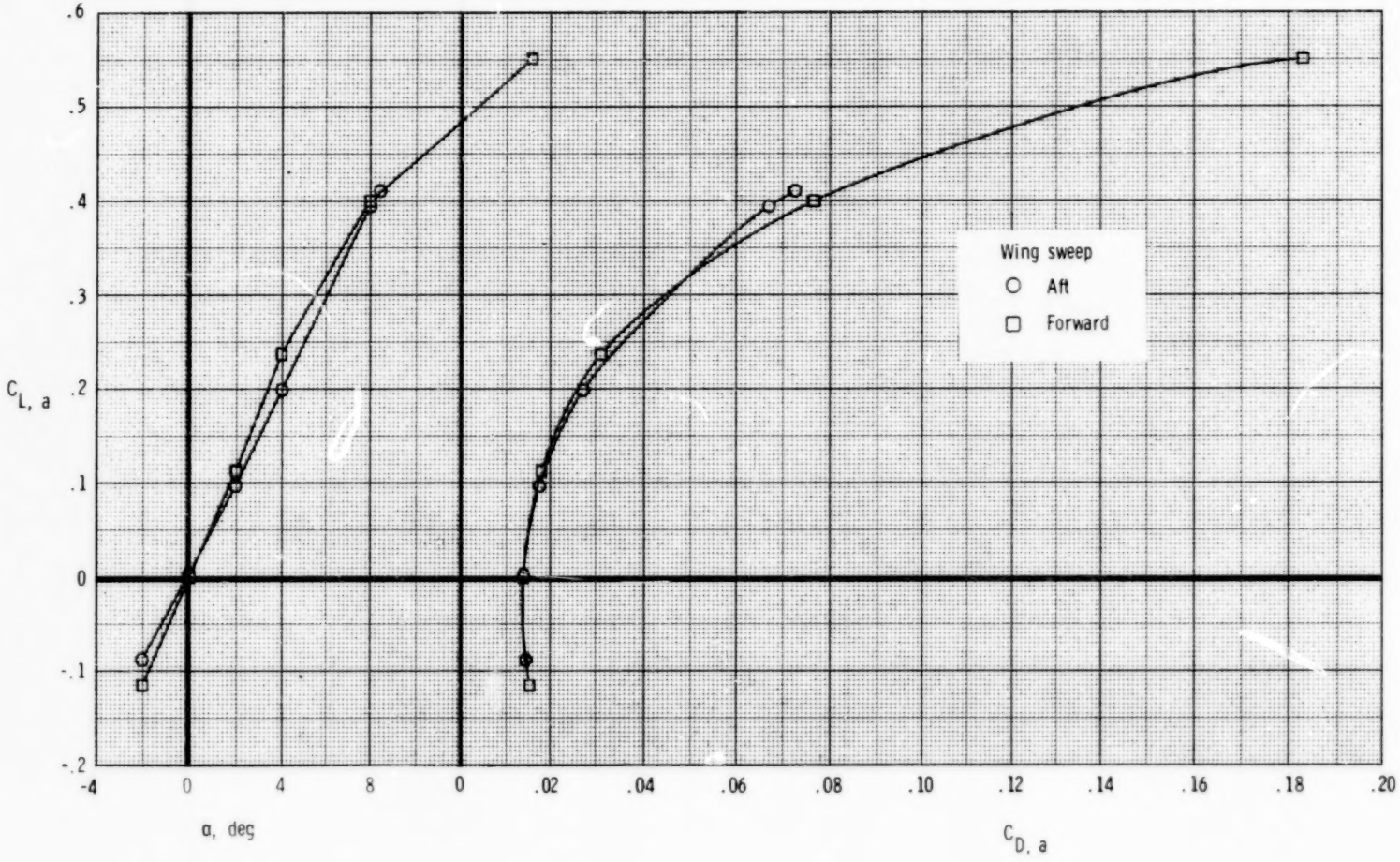
(a) $\delta_v = 0^o$.

Figure 45.- Effect of wing sweep on thrust-removed aerodynamic characteristics. 2-D C-D nozzle, A/B power; M = 0.90; NPR = 3.5.



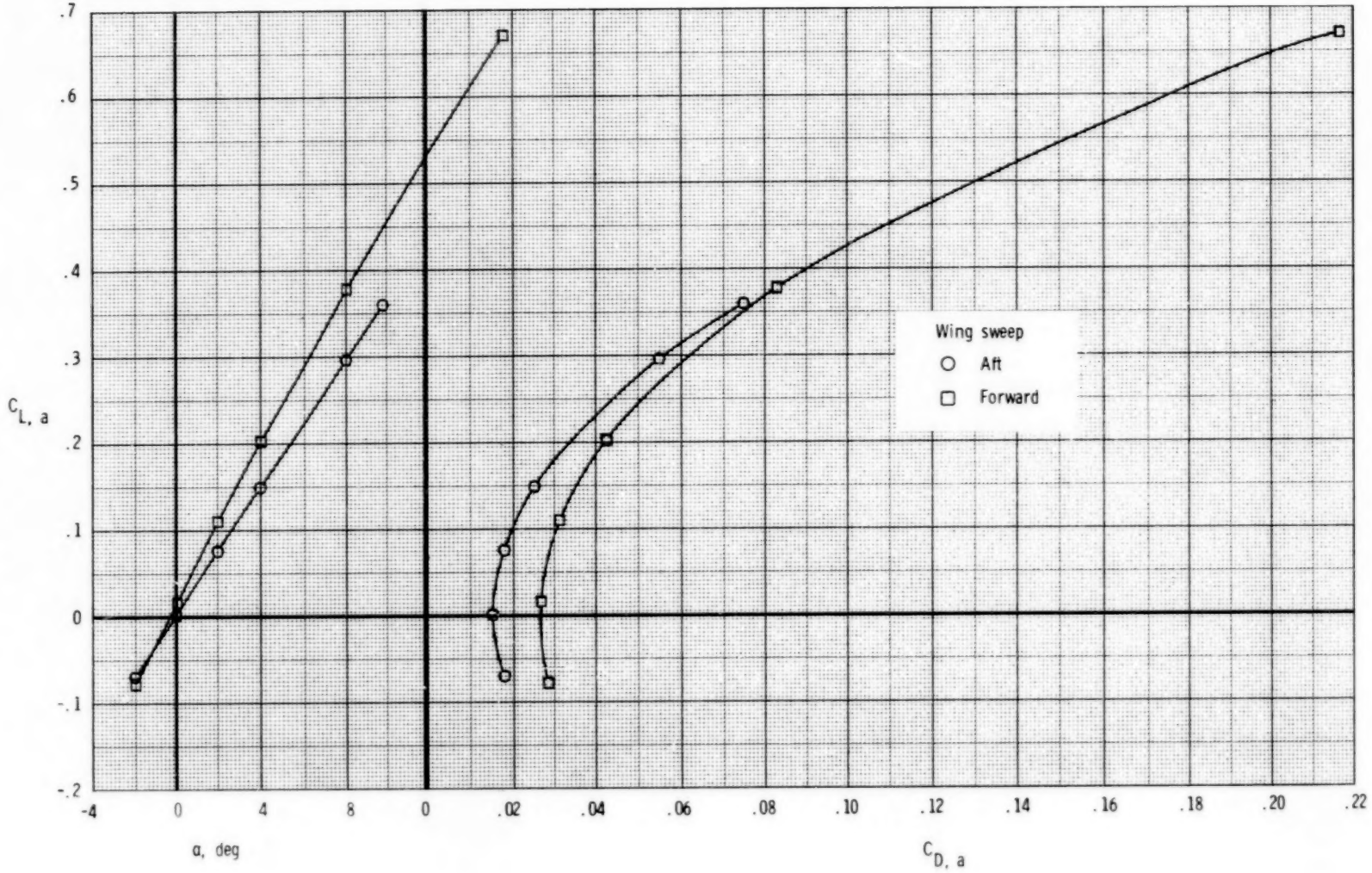
(b) $\delta_v = 10^o$.

Figure 45.- Continued.



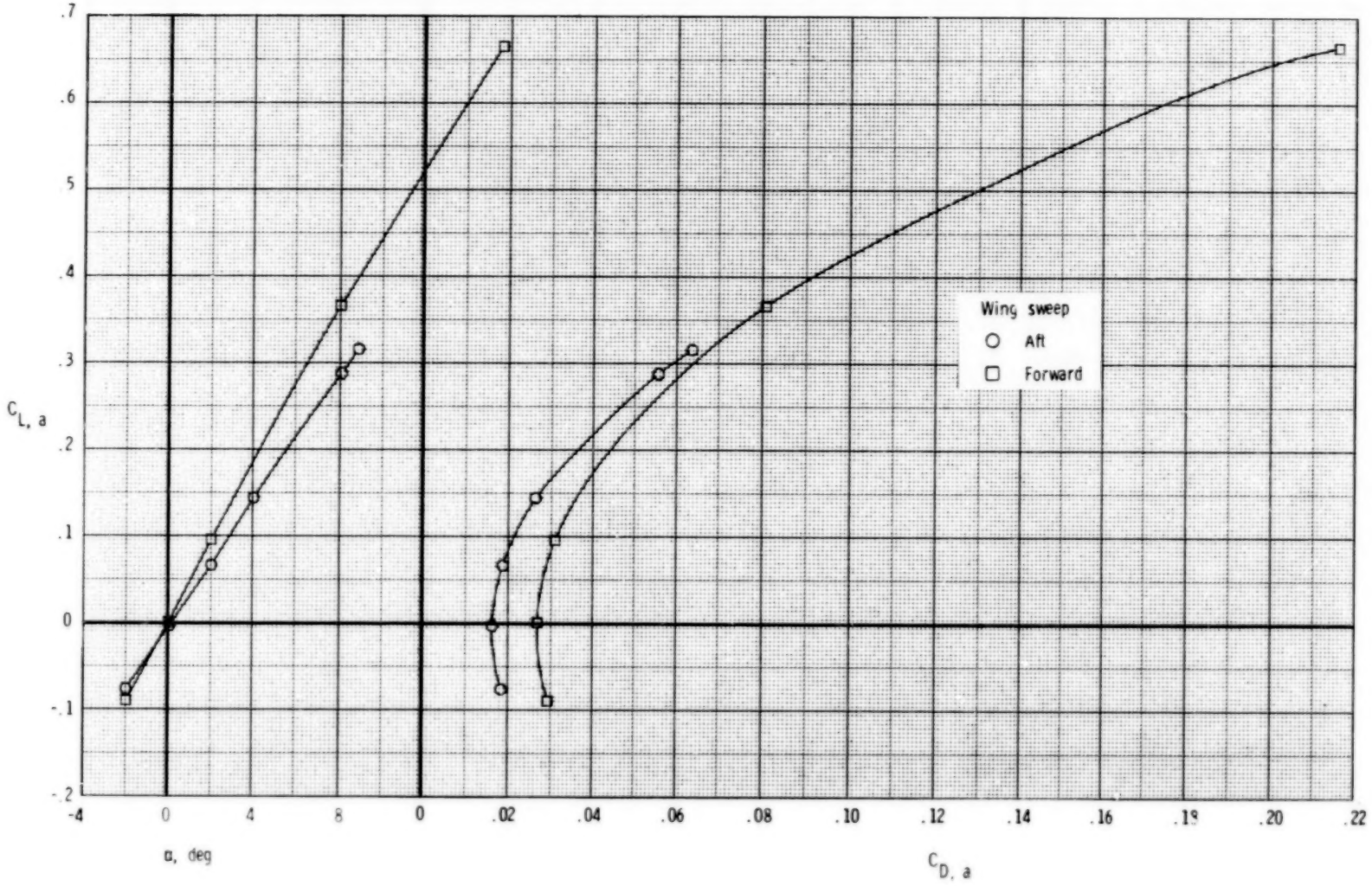
(c) $\delta_v = 20^\circ$.

Figure 45.- Concluded.



(a) $\delta_v = 0^o$.

Figure 46.- Effect of wing sweep on thrust-removed aerodynamic characteristics. 2-D C-D nozzle, A/B power; M = 1.20; NPR = 7.0.



(b) $\delta_v = 10^\circ$.

Figure 46.- Concluded.

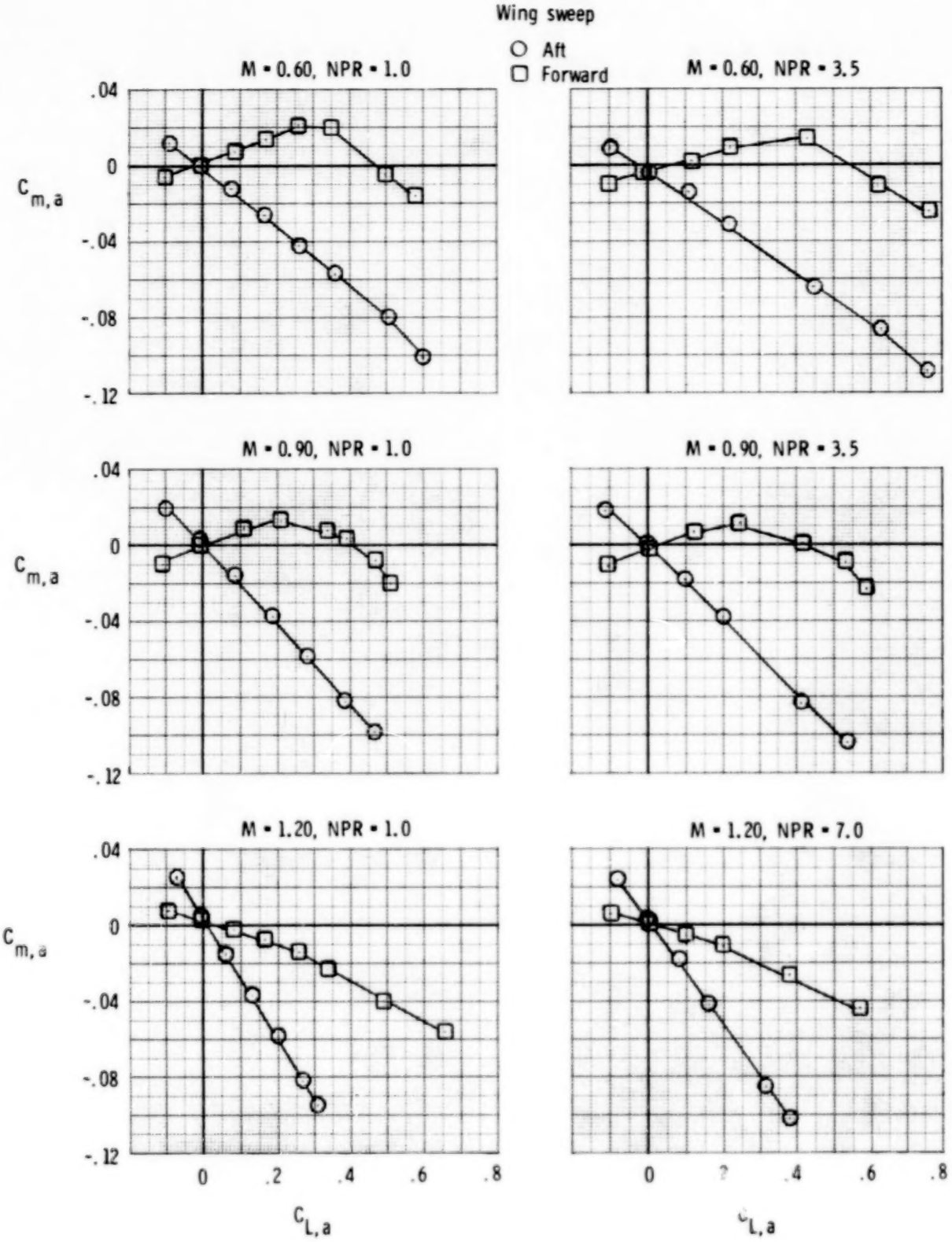
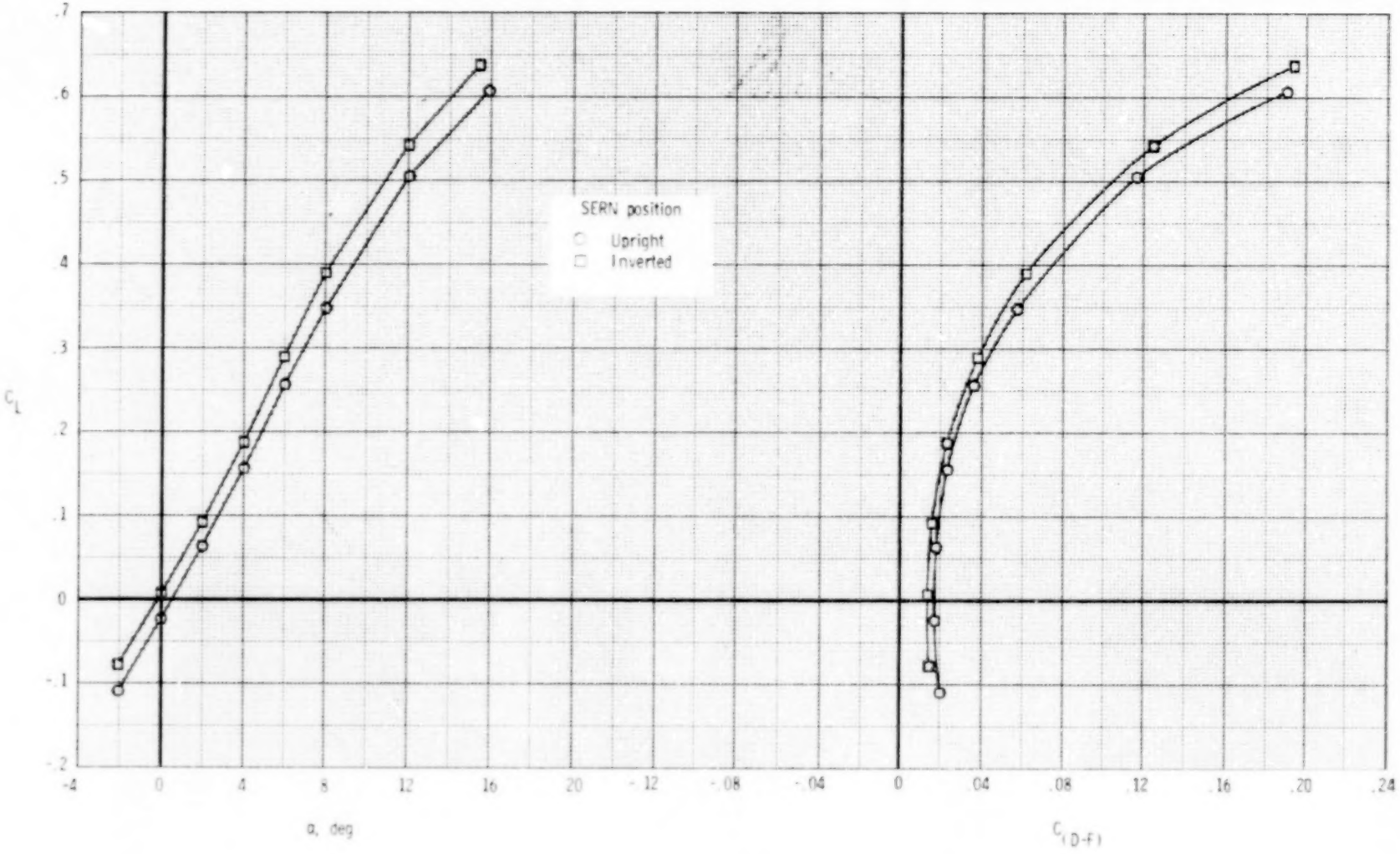
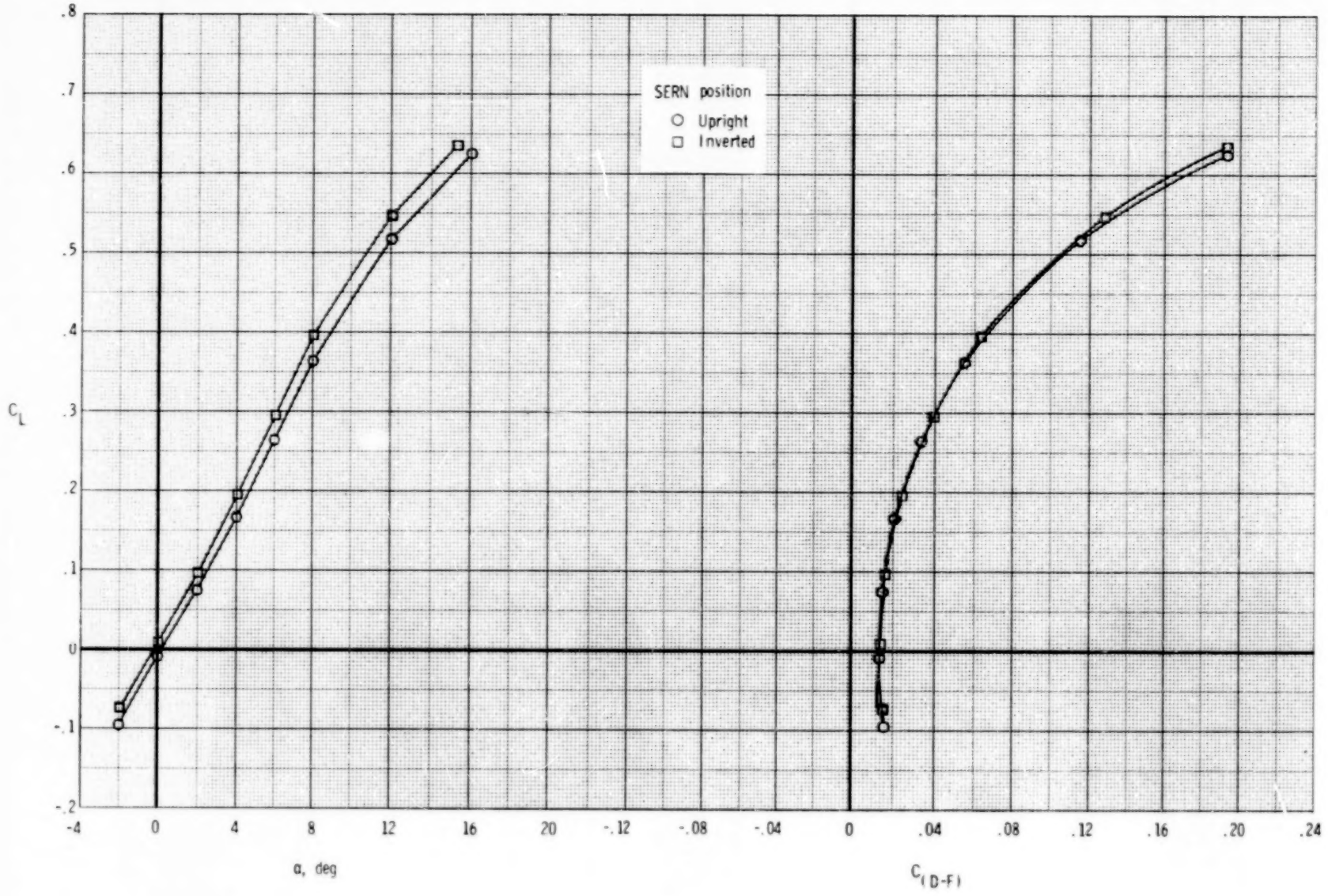


Figure 47.- Effect of wing sweep on thrust-removed pitching-moment coefficient for upright SERN, A/B power. $\delta_v = 0^o$.



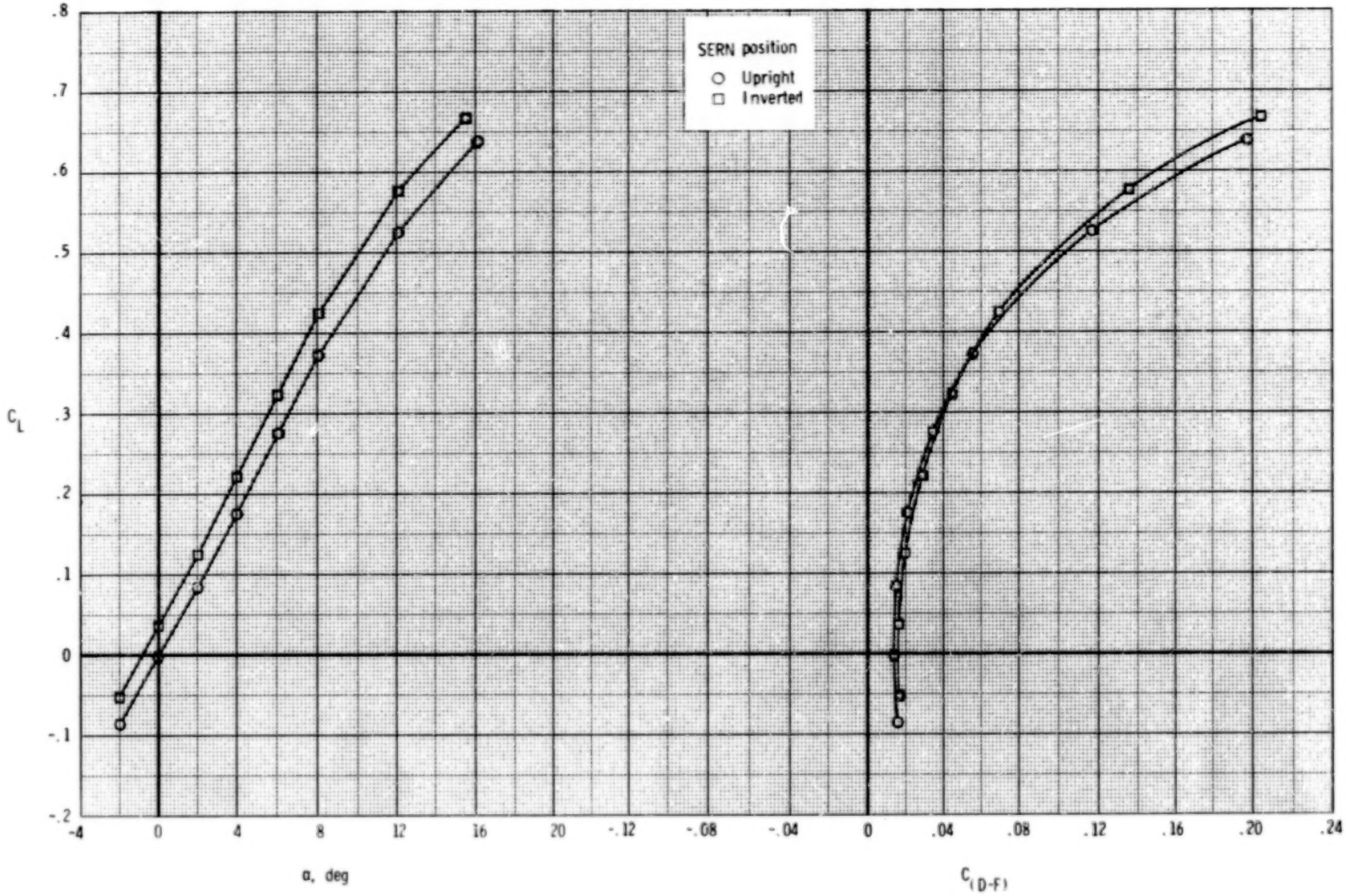
(a) $\delta_V = -5^o$.

Figure 48.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 0.60; NPR = 1.0.



(b) $\delta_v = 0^o$.

Figure 48.- Continued.



(c) $\delta_v = 10^o$.

Figure 48.- Continued.

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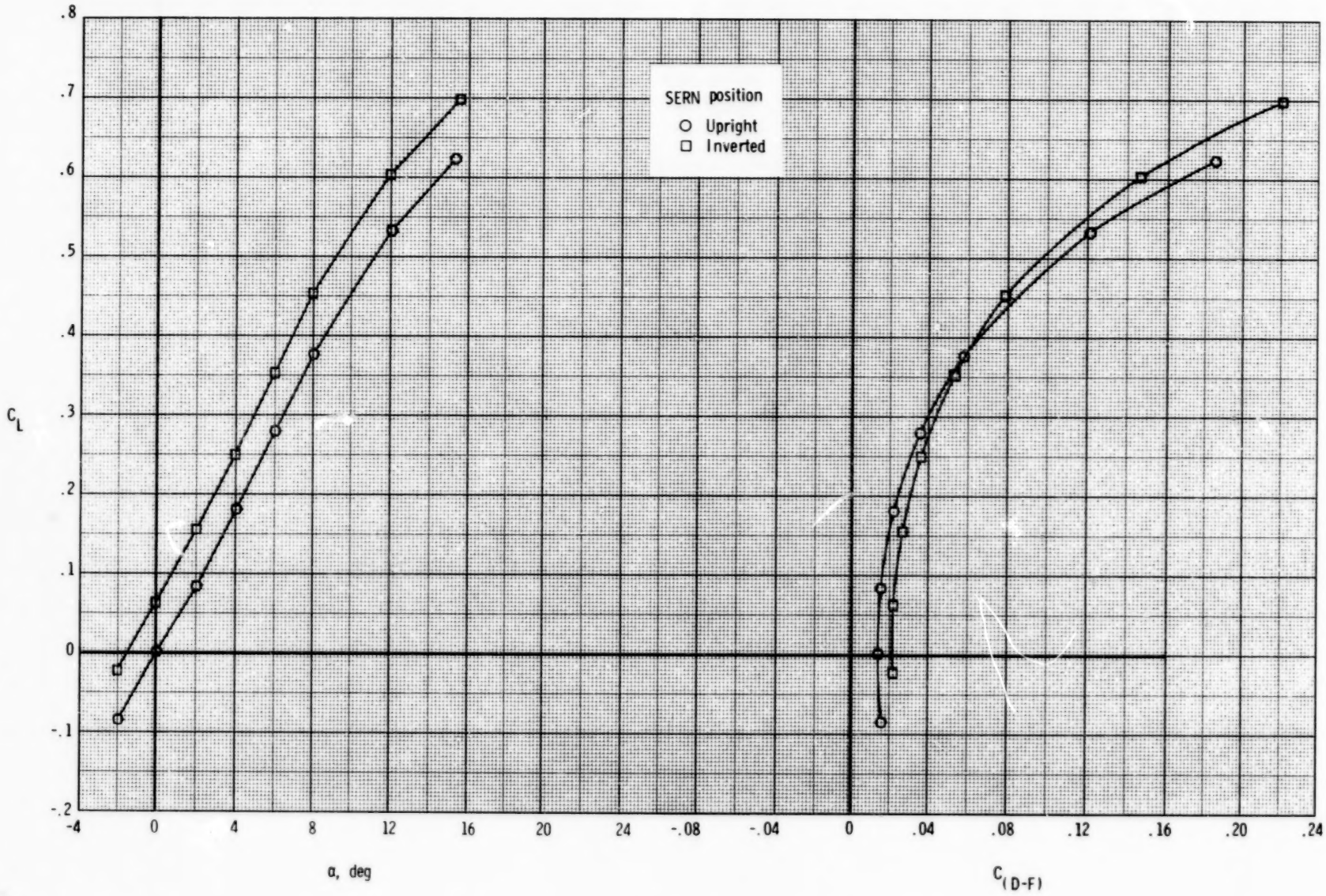
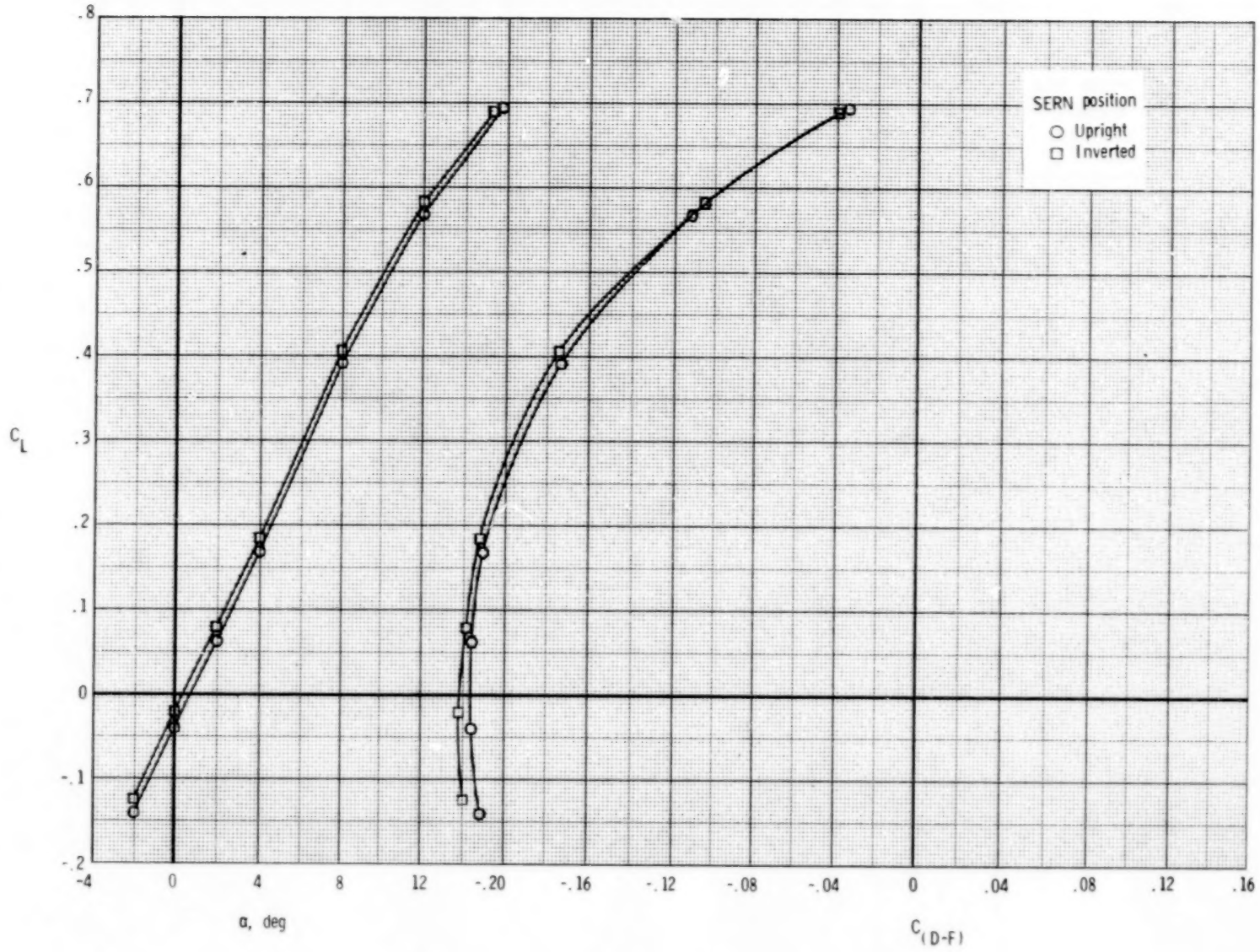


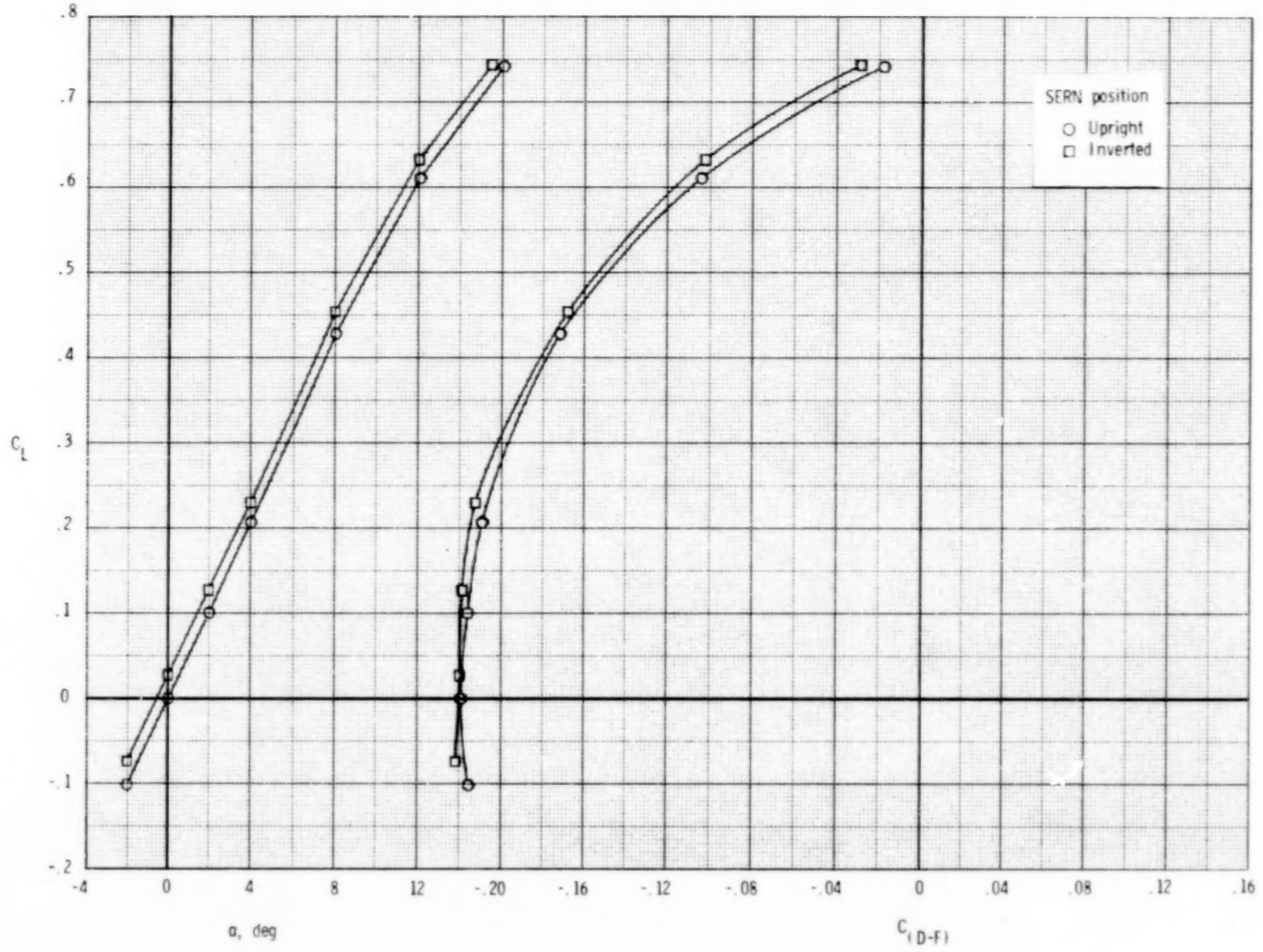
(d) $\delta_v = 20^o$.

Figure 48.- Concluded.



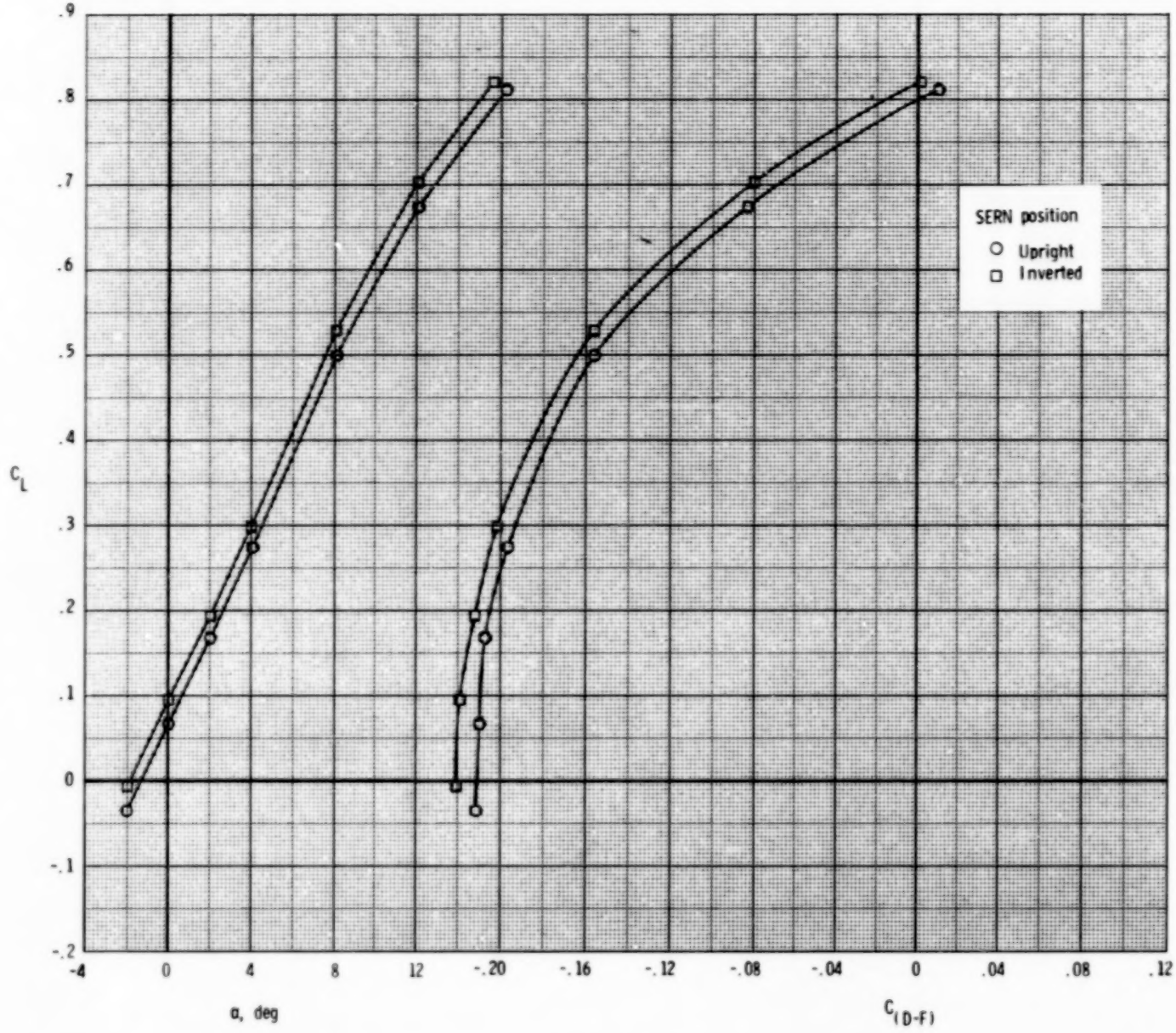
(a) $\delta_v = -5^o$.

Figure 49.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 0.60; NPR = 3.5.



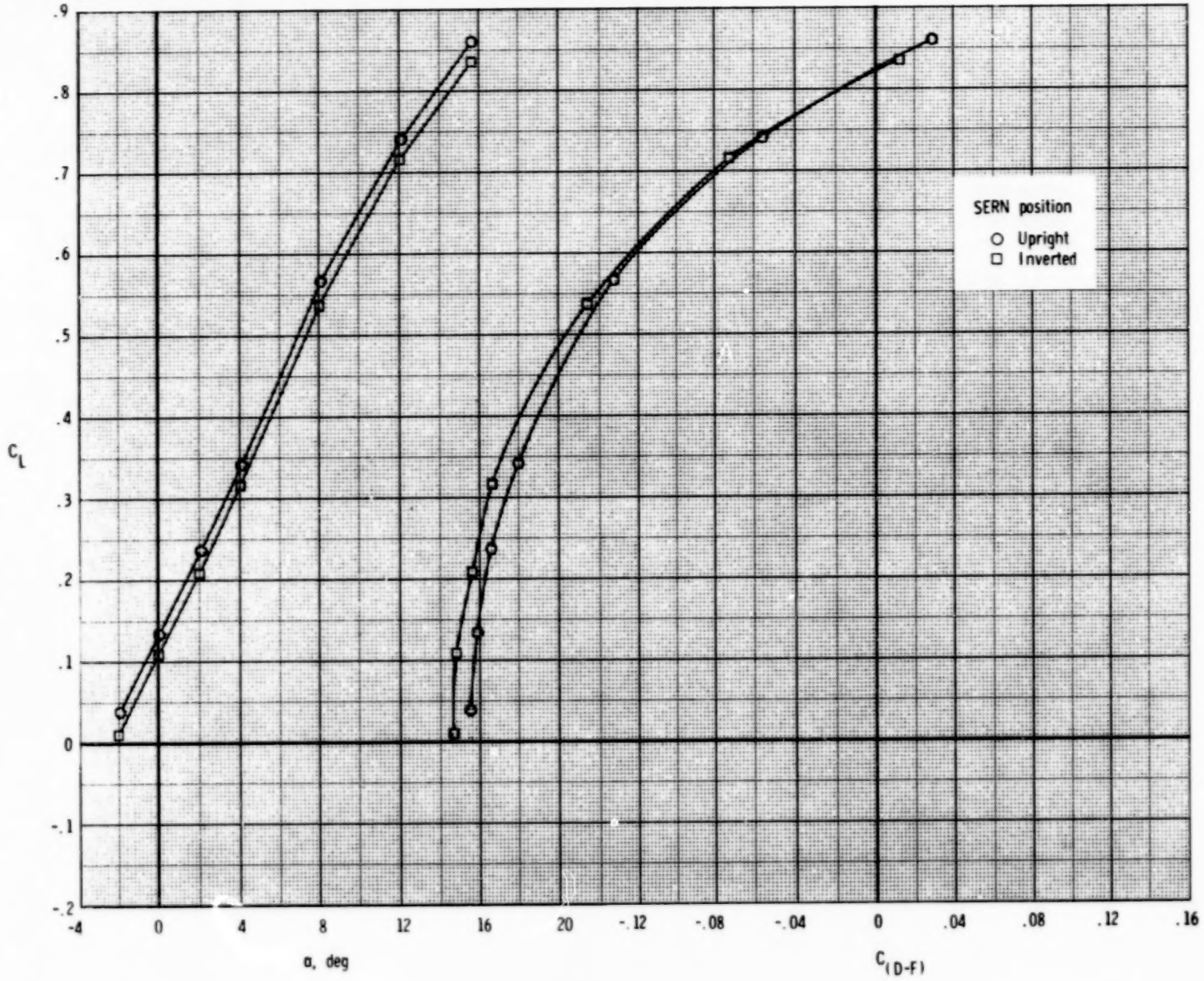
(b) $\delta_v = 0^o$.

Figure 49.- Continued.



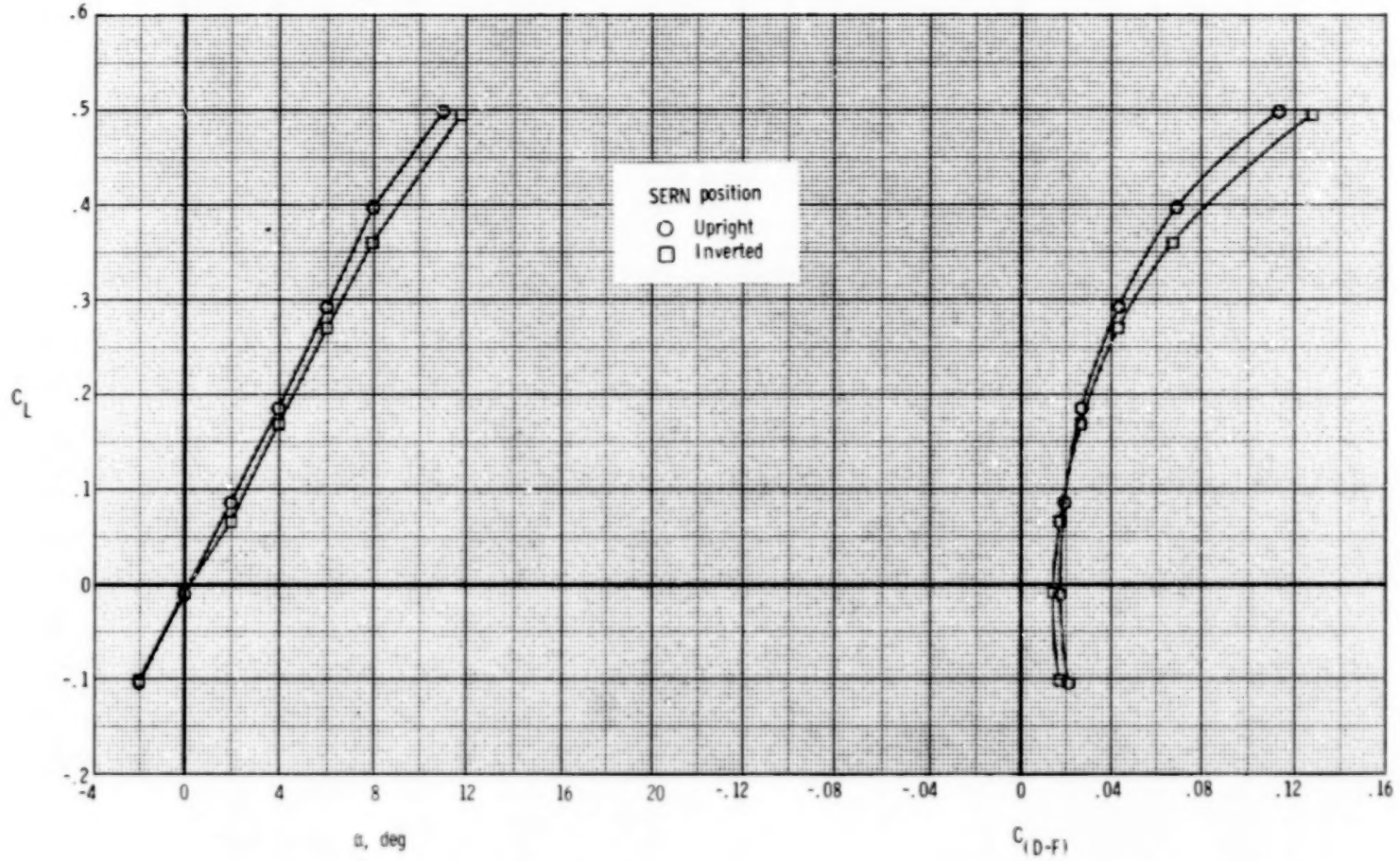
(c) $\delta_v = 10^o$.

Figure 49.- Continued.



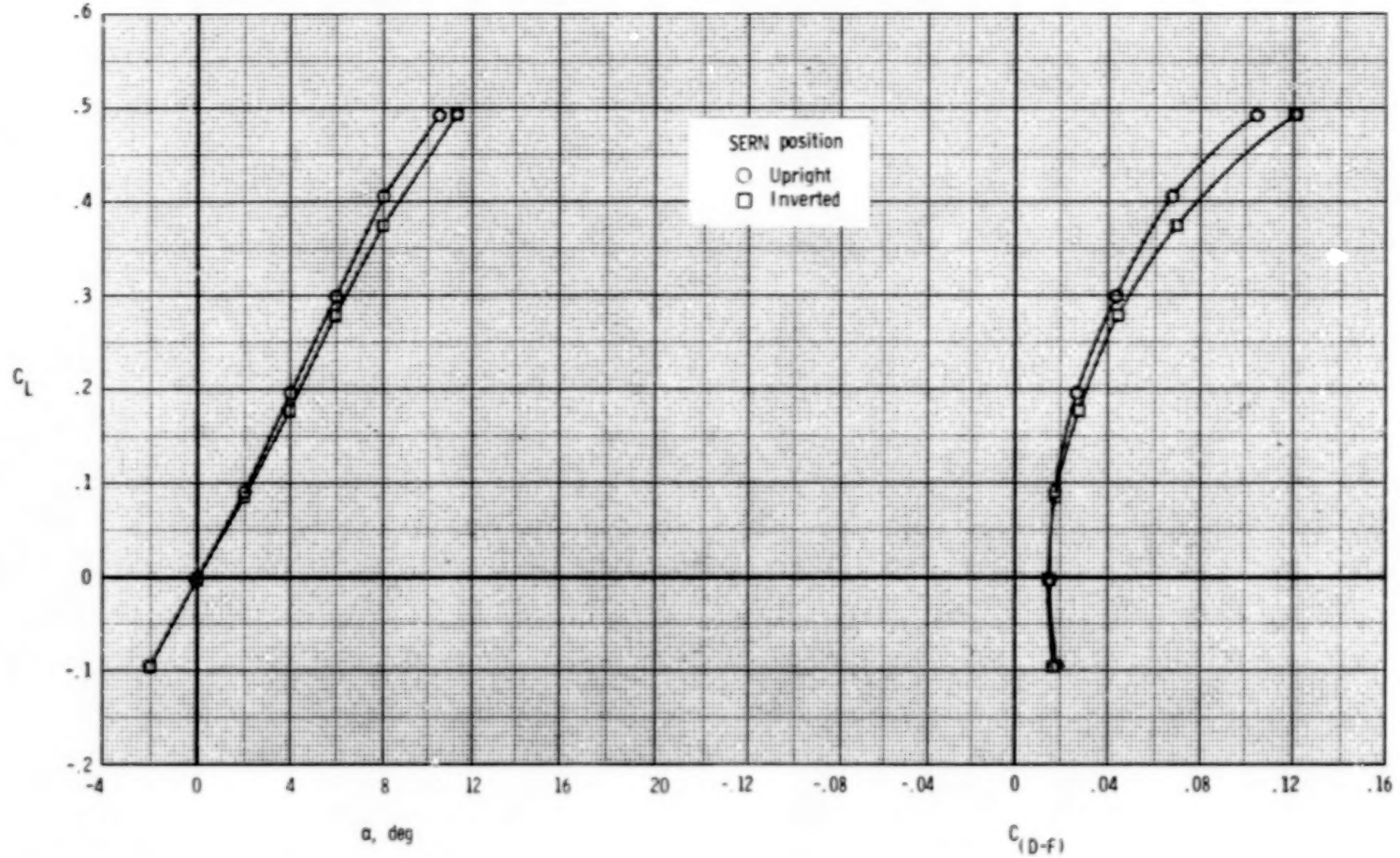
(d) $\delta_v = 20^o$.

Figure 49.- Concluded.



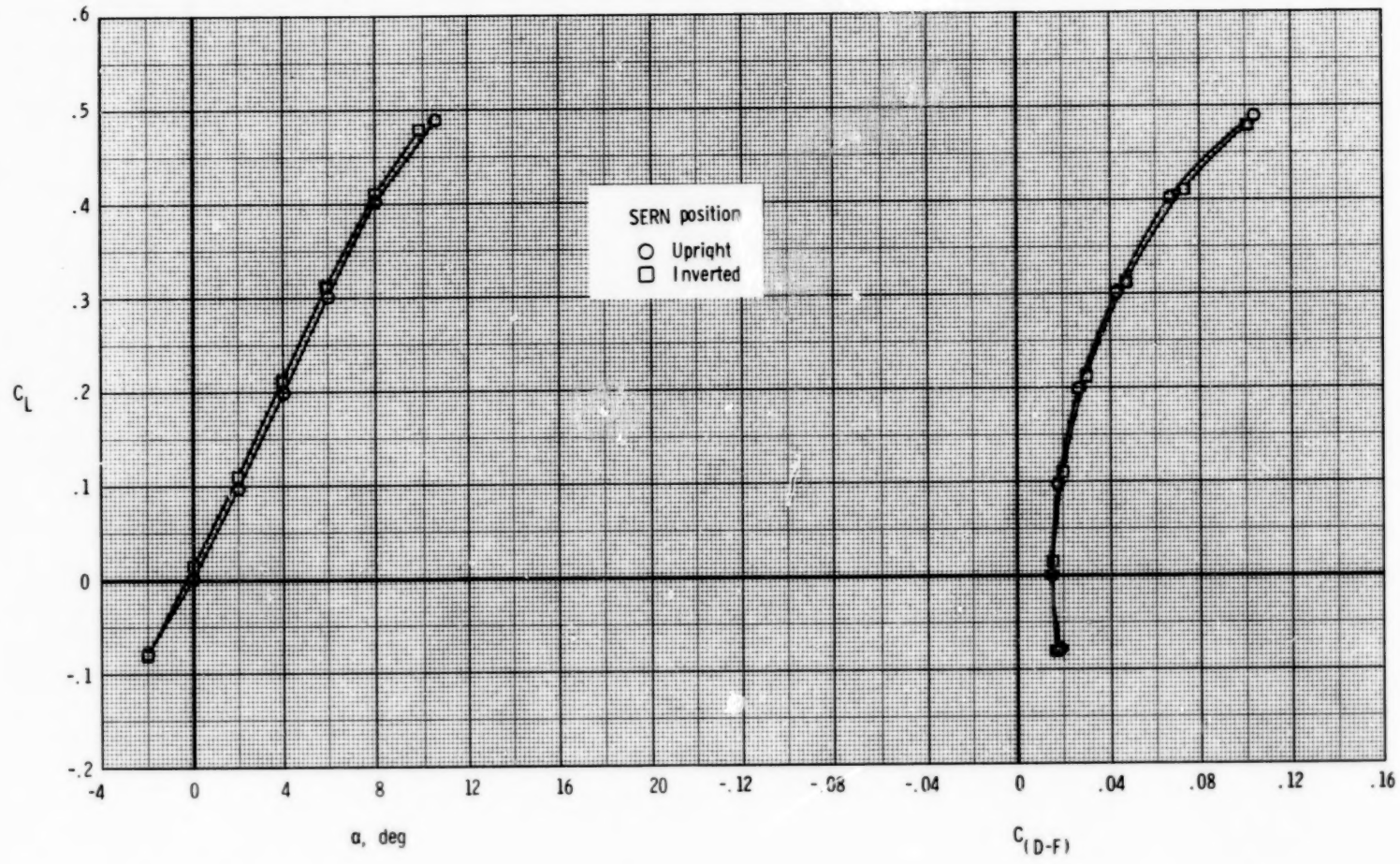
(a) $\delta_v = -5^o$.

Figure 50.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 0.90; NPR = 1.0.



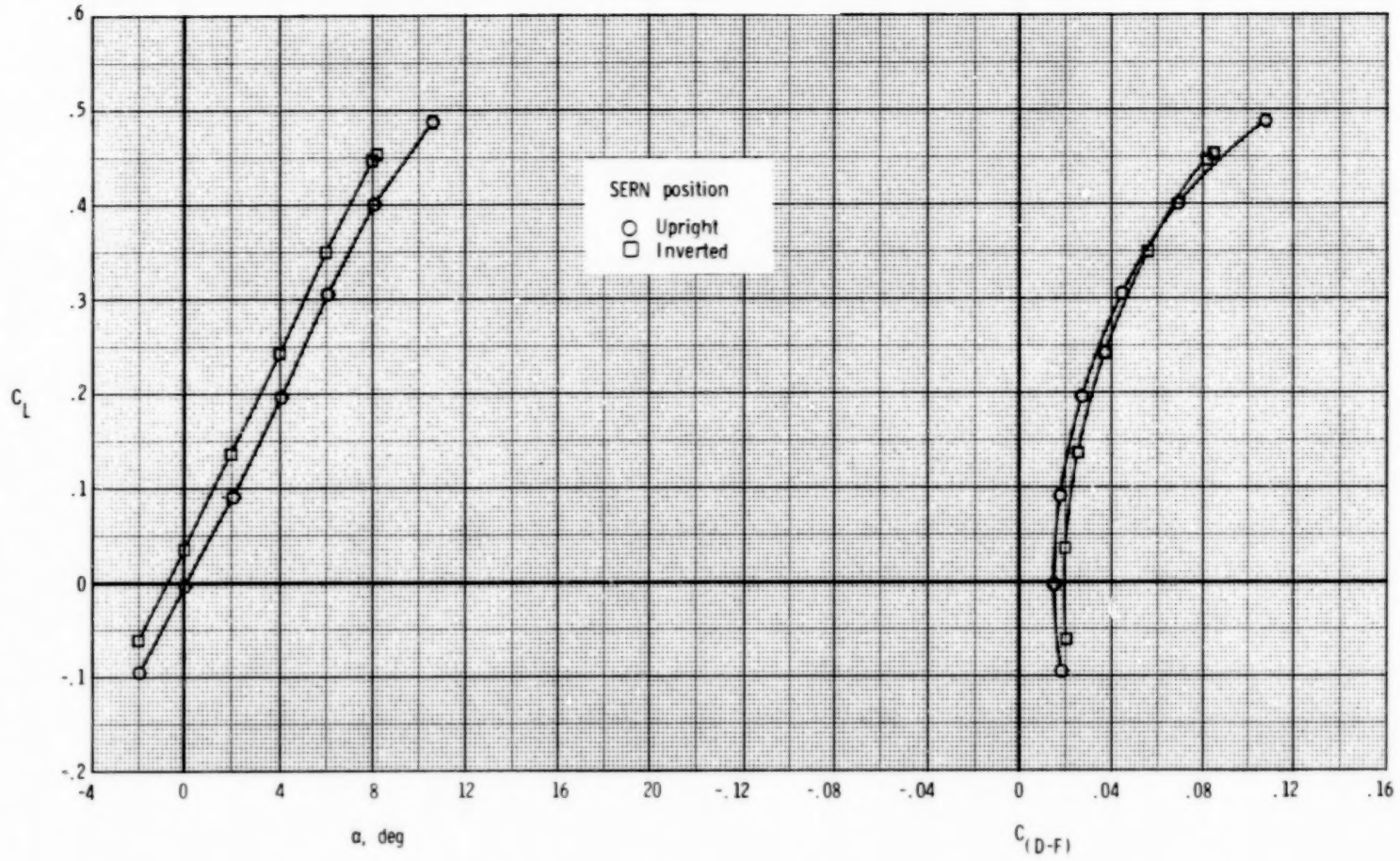
(b) $\delta_v = 0^o$.

Figure 50.- Continued.



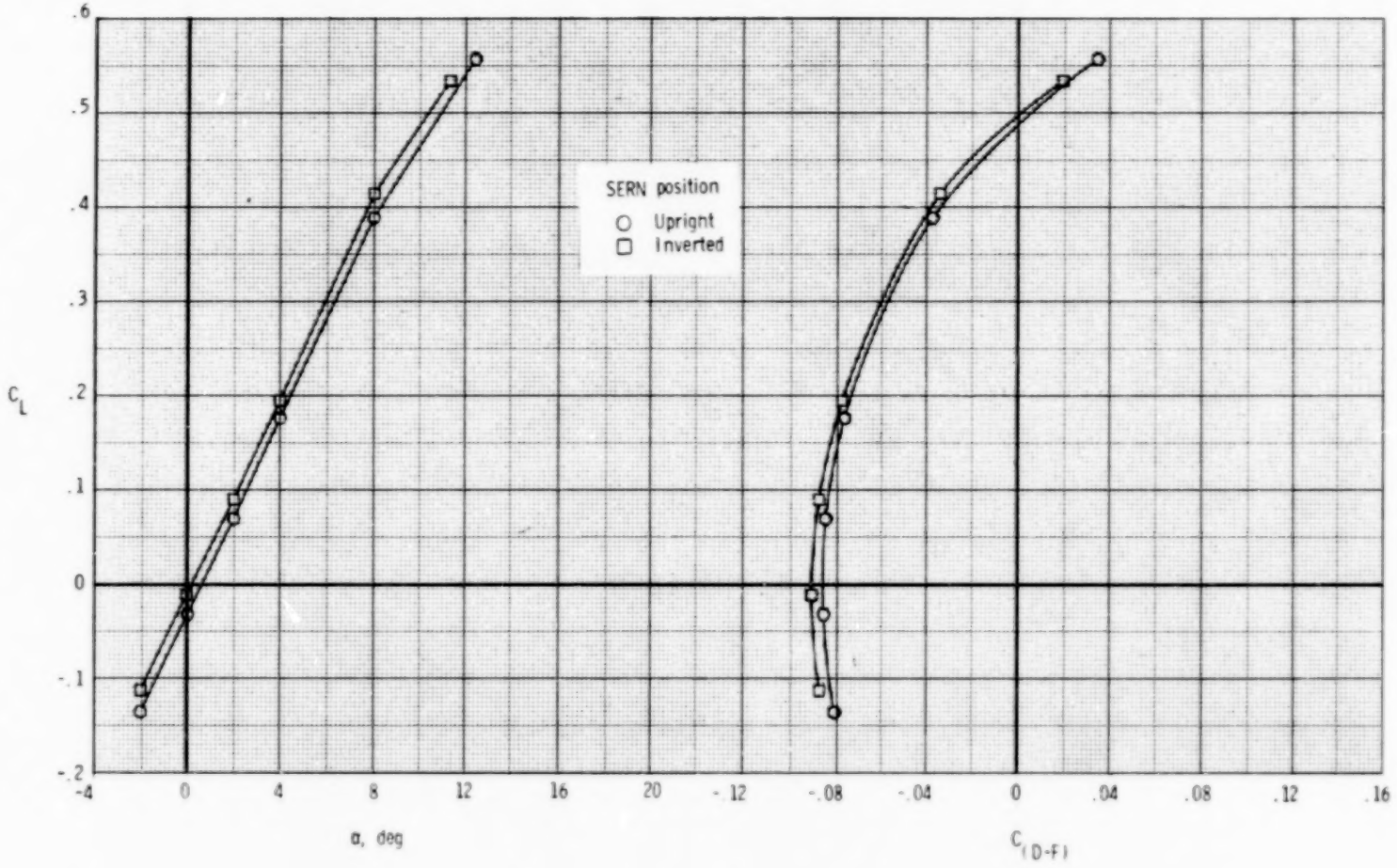
(c) $\delta_v = 10^o$.

Figure 50.- Continued.



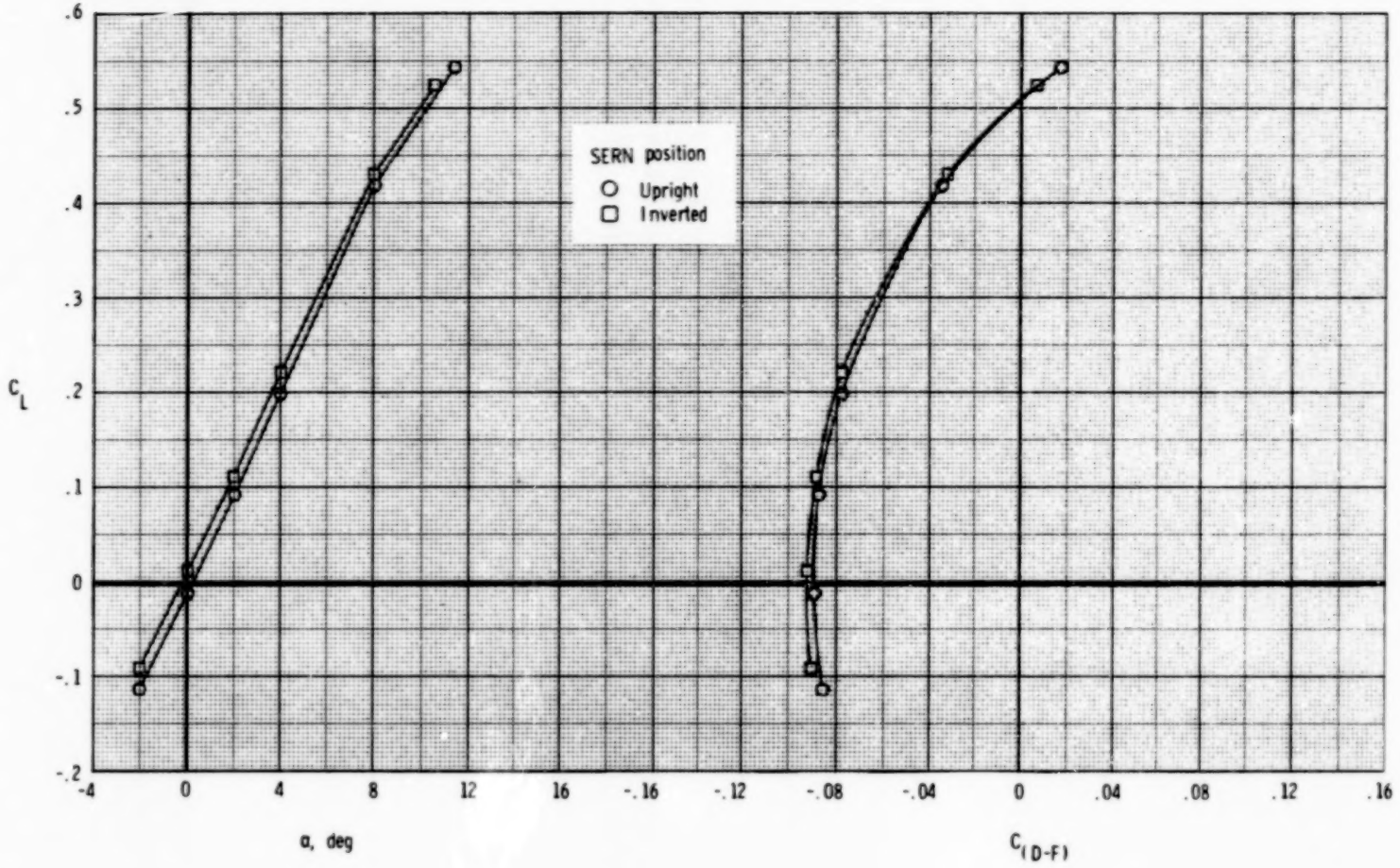
(d) $\delta_v = 20^o$.

Figure 50.- Concluded.



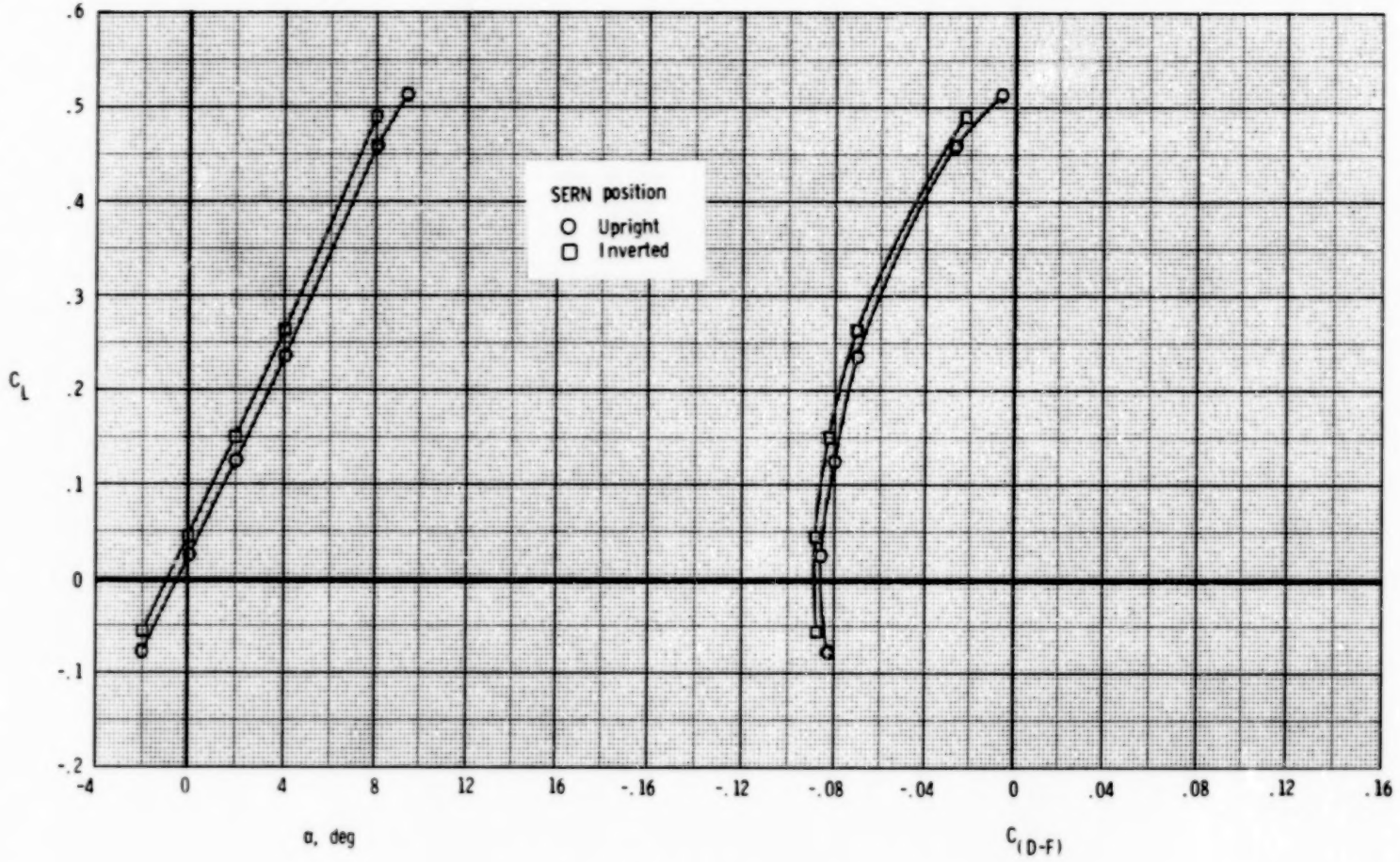
(a) $\delta_v = -5°$.

Figure 51.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 0.90; NPR = 3.5.



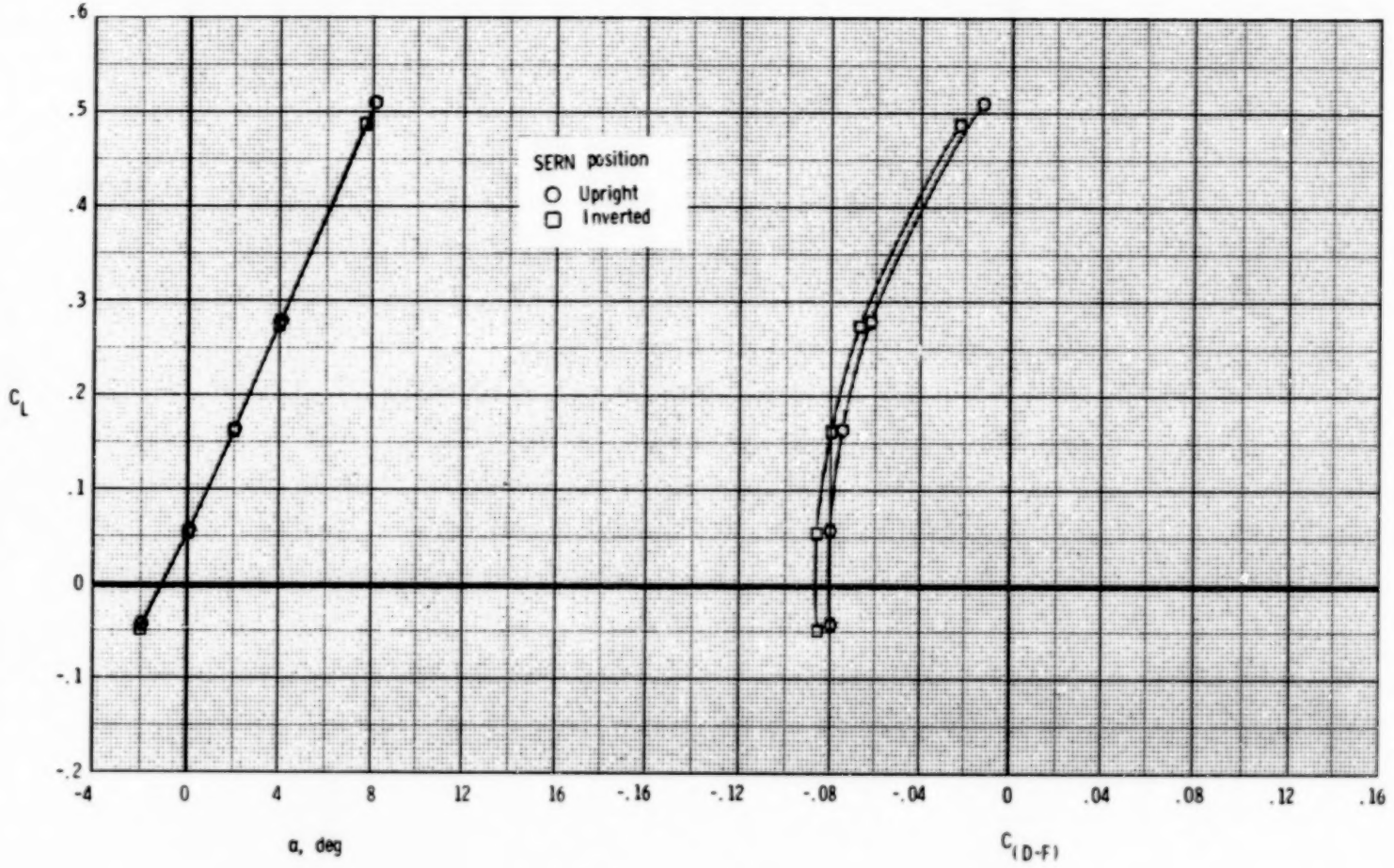
(b) $\delta_v = 0^o$.

Figure 51.- Continued.



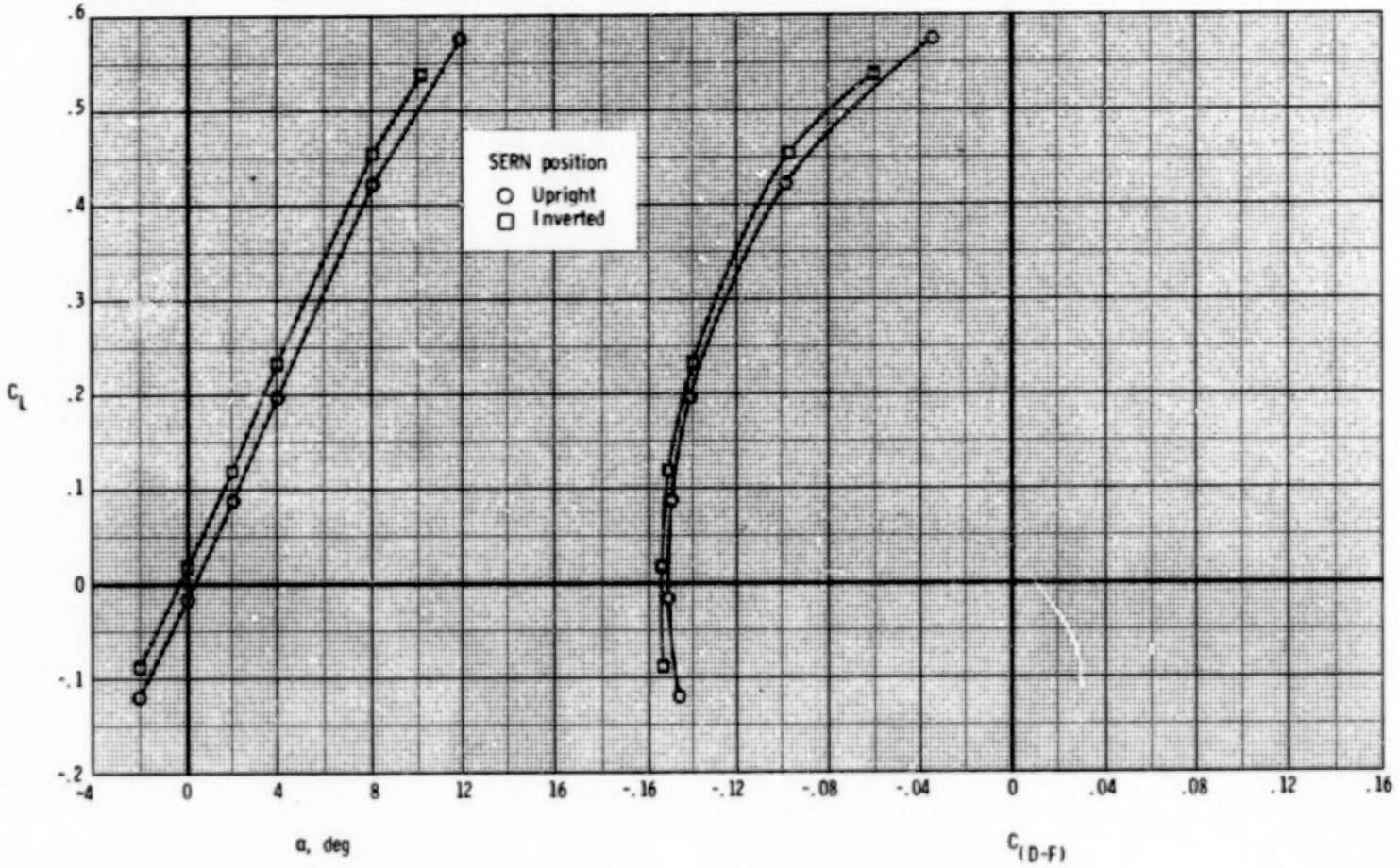
(c) $\delta_v = 10°$.

Figure 51.- Continued.



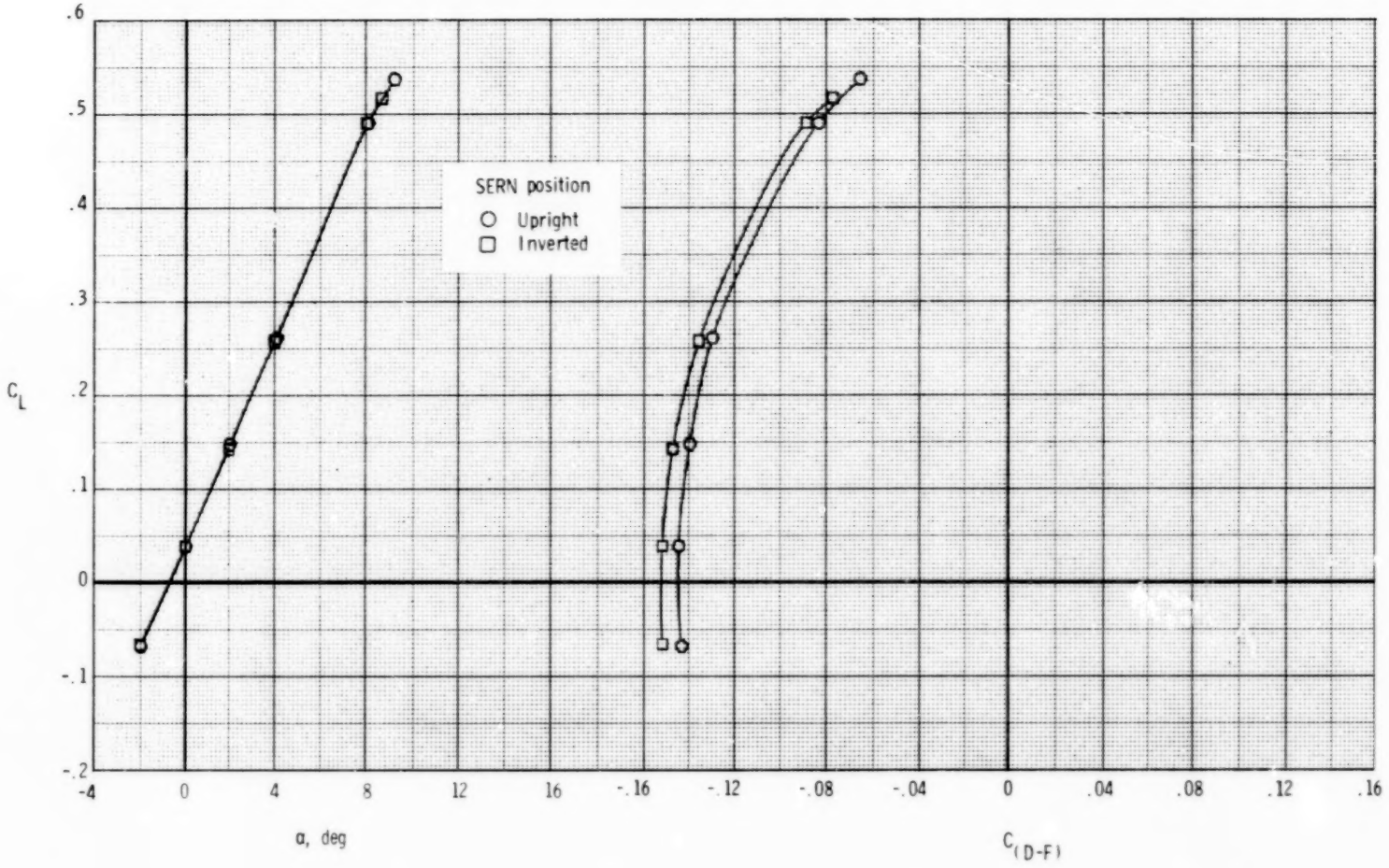
(d) $\delta_v = 20^o$.

Figure 51.- Concluded.



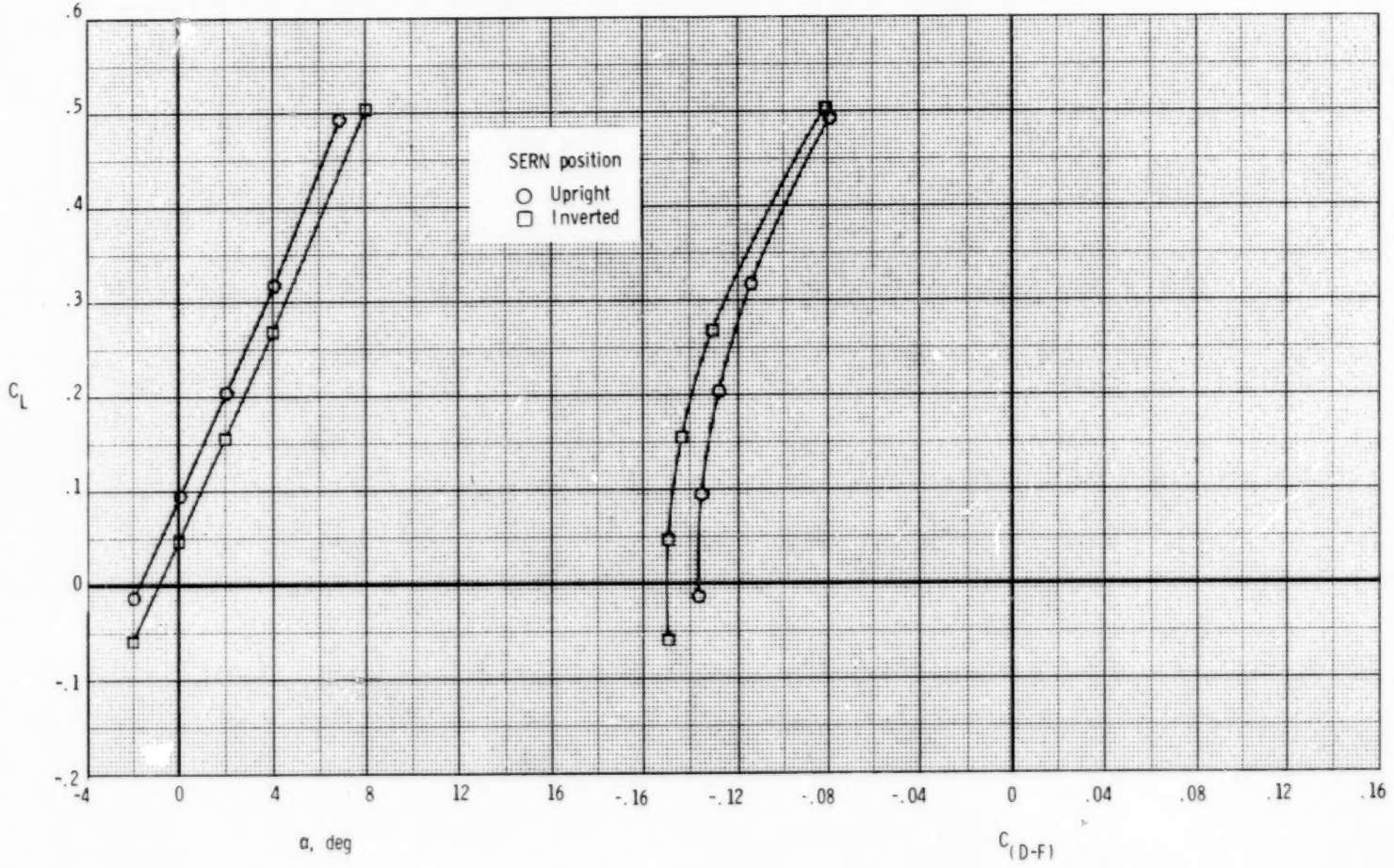
(a) $\delta_v = 0^o$.

Figure 52.- Effect of SERN position on longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 0.90; NPR = 5.0.



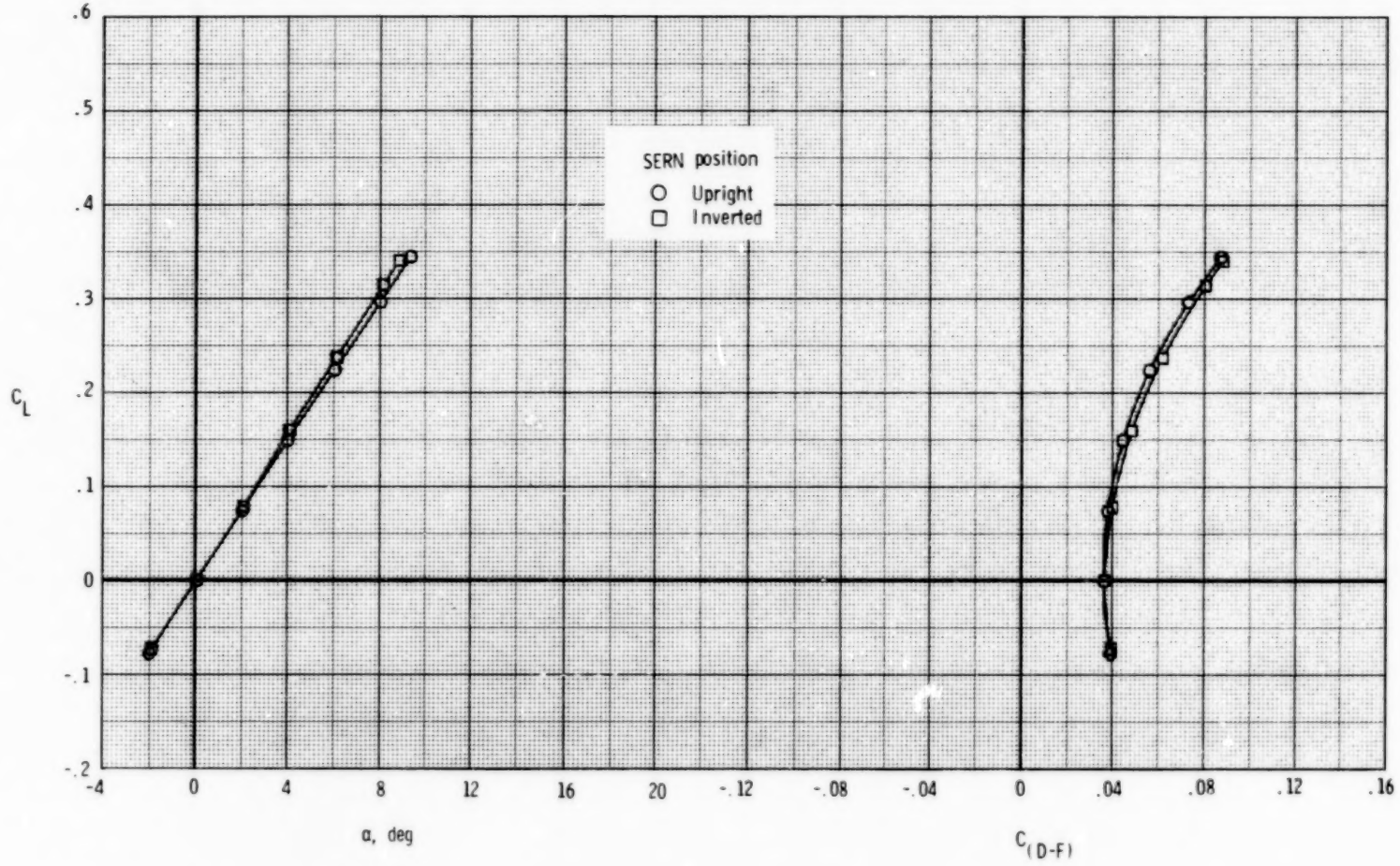
(b) $\delta_v = 10^o$.

Figure 52.- Continued.



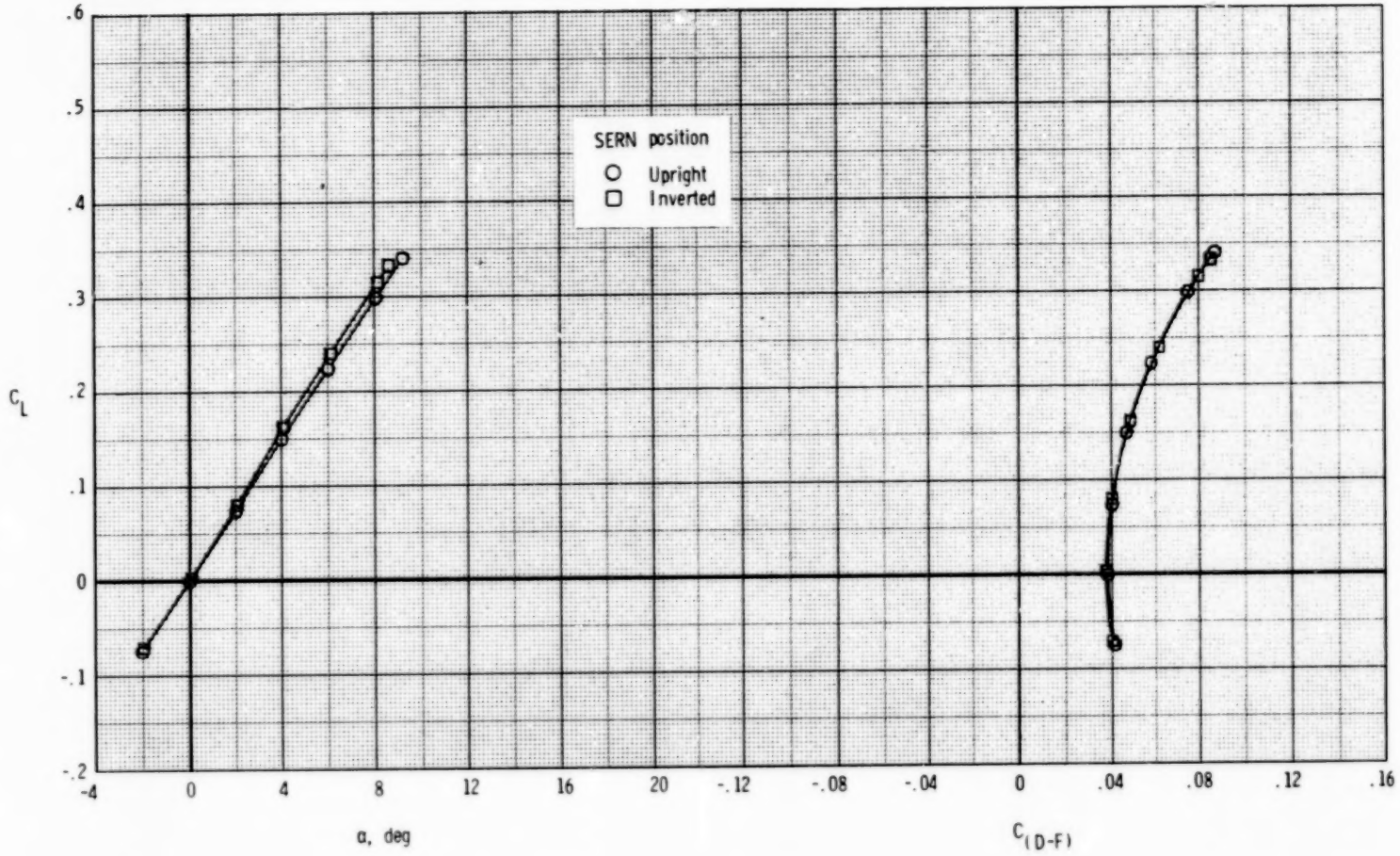
(c) $\delta_v = 20^o$.

Figure 52.- Concluded.



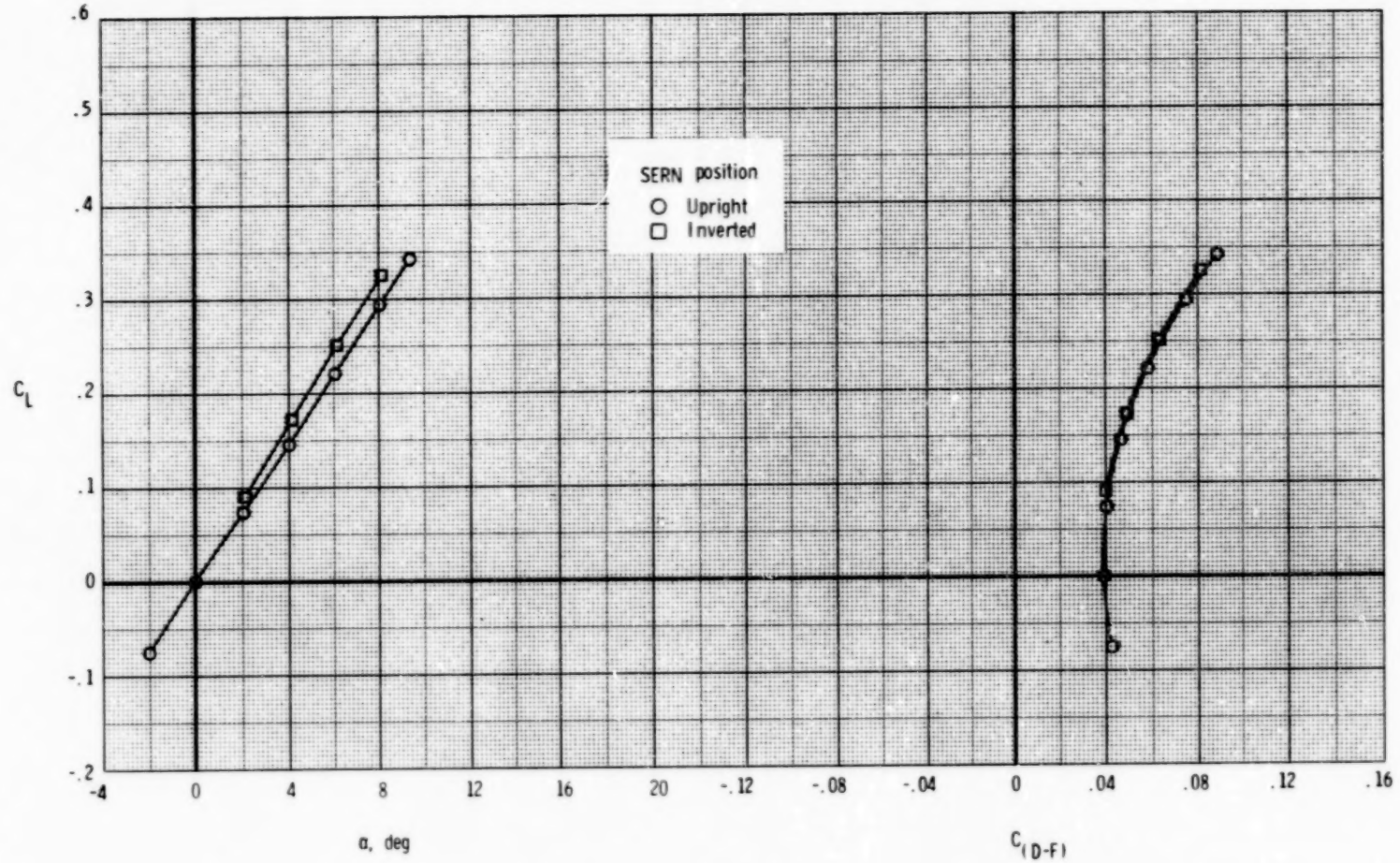
(a) $\delta_v = -5^o$.

Figure 53.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 1.20; NPR = 1.0.



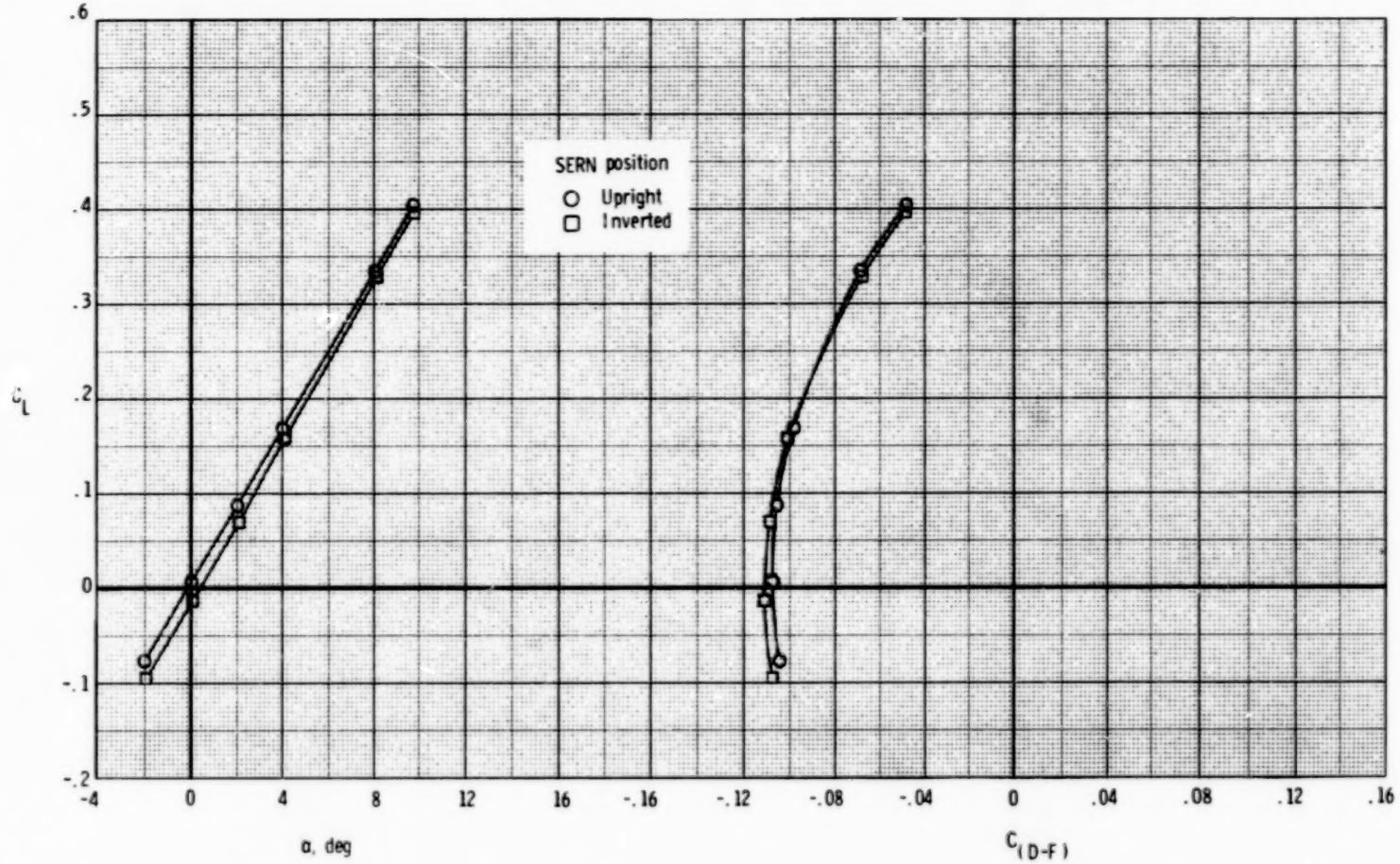
(b) $\delta_v = 0^o$.

Figure 53.- Continued.



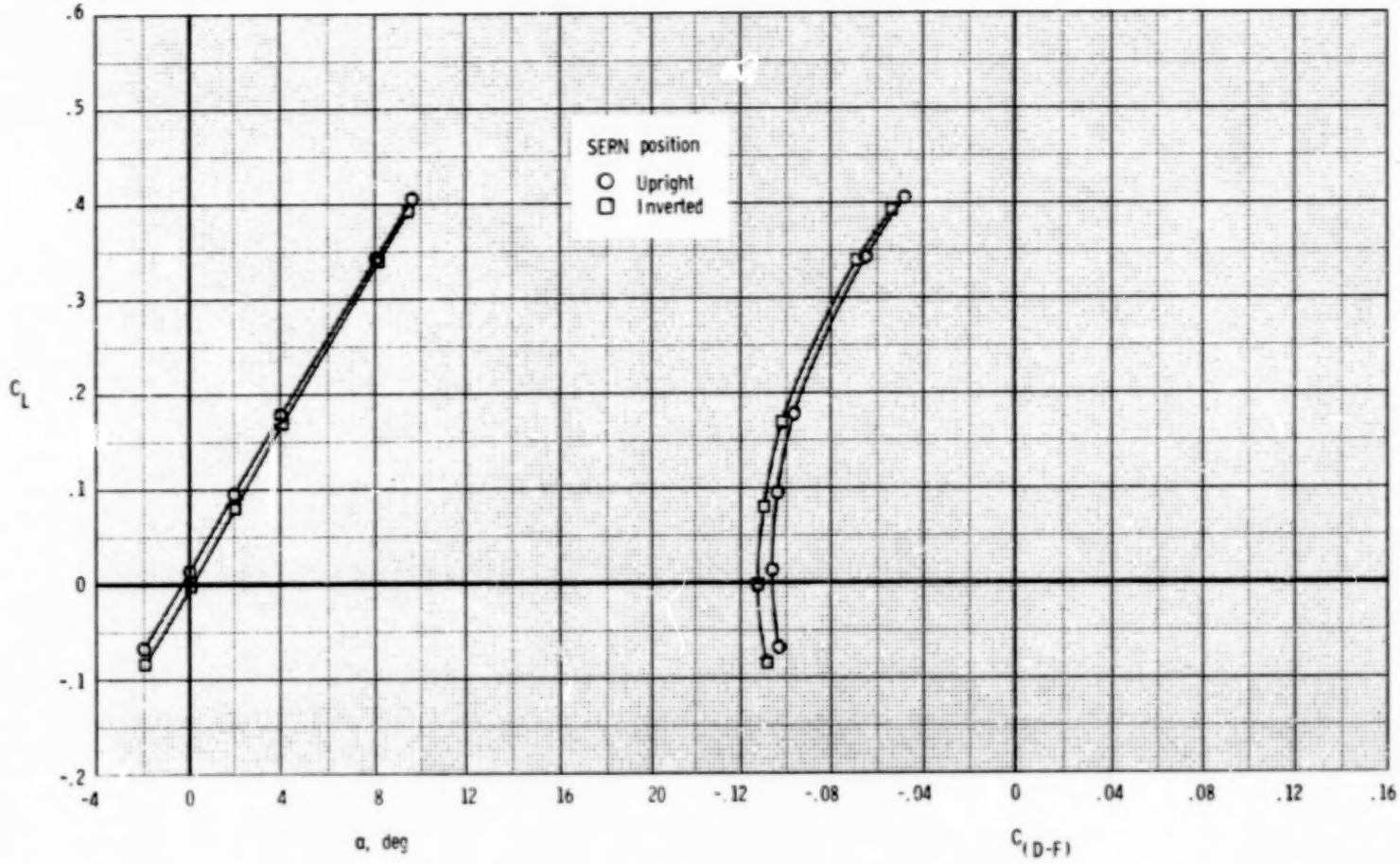
(c) $\delta_v = 10^o$.

Figure 53.- Concluded.



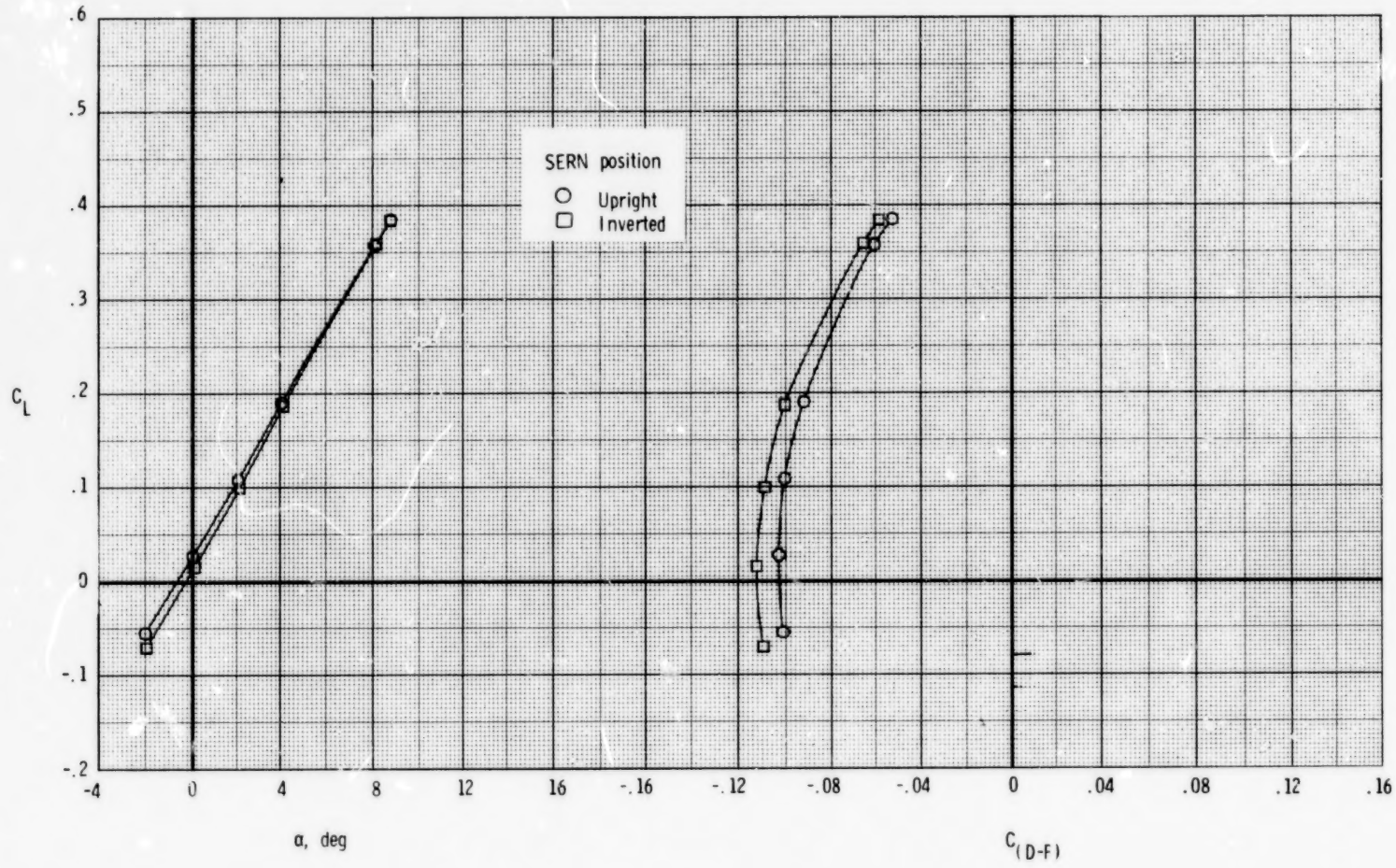
(a) $\delta_v = -5^o$.

Figure 54.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; A/B power; M = 1.20; NPR = 7.0.



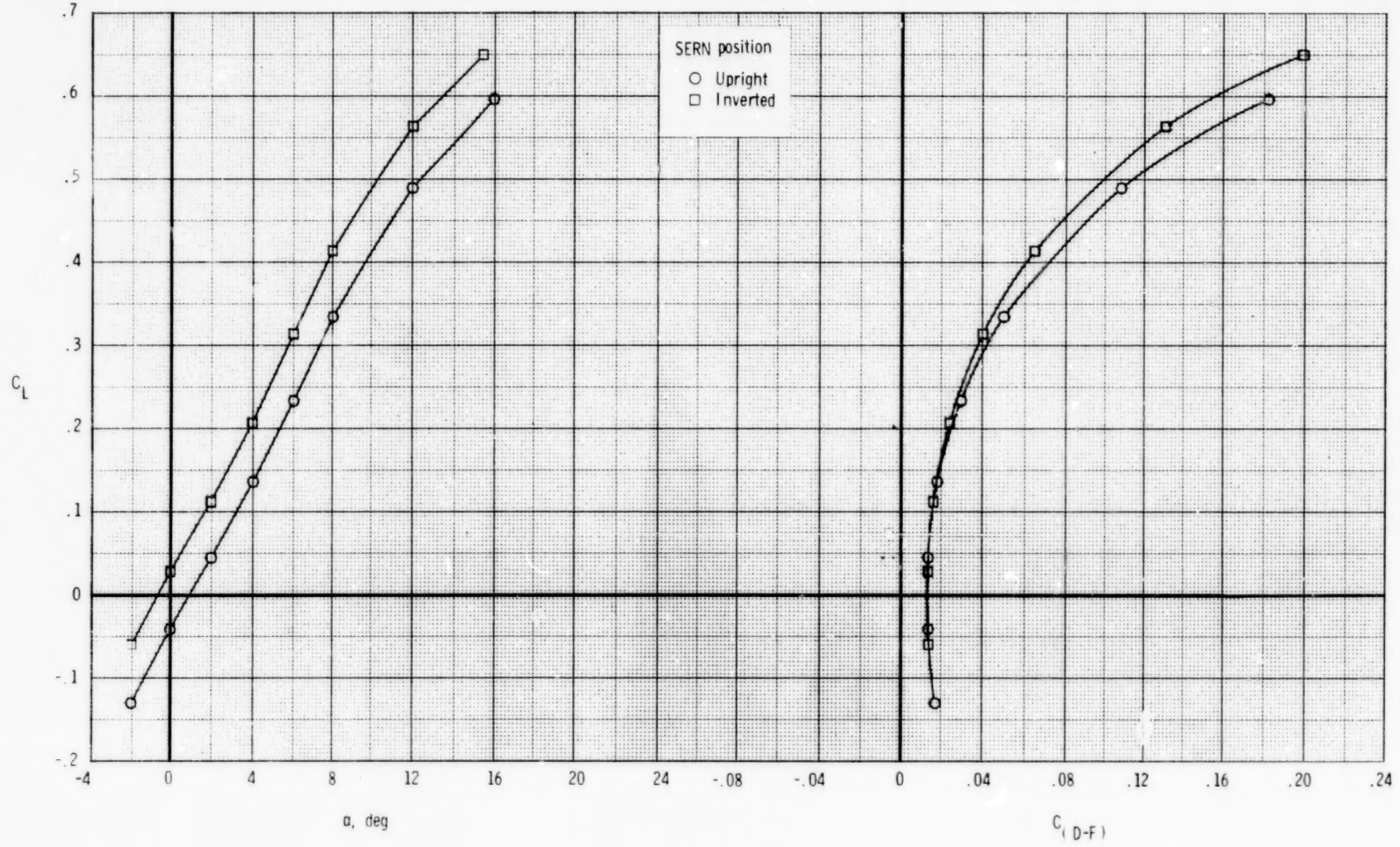
(b) $\delta_v = 0^o$.

Figure 54.- Continued.



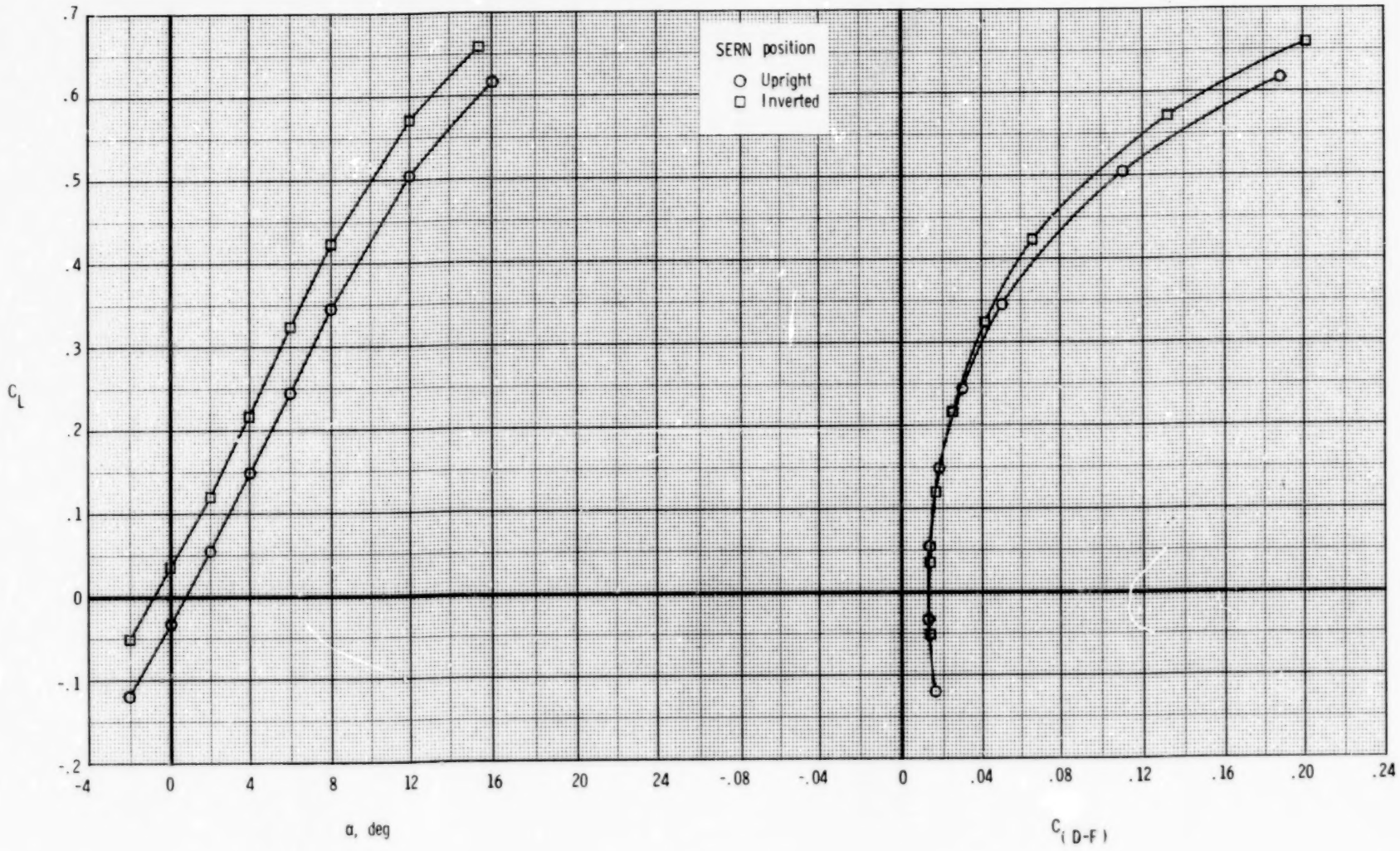
(c) $\delta_v = 10^o$.

Figure 54.- Concluded.



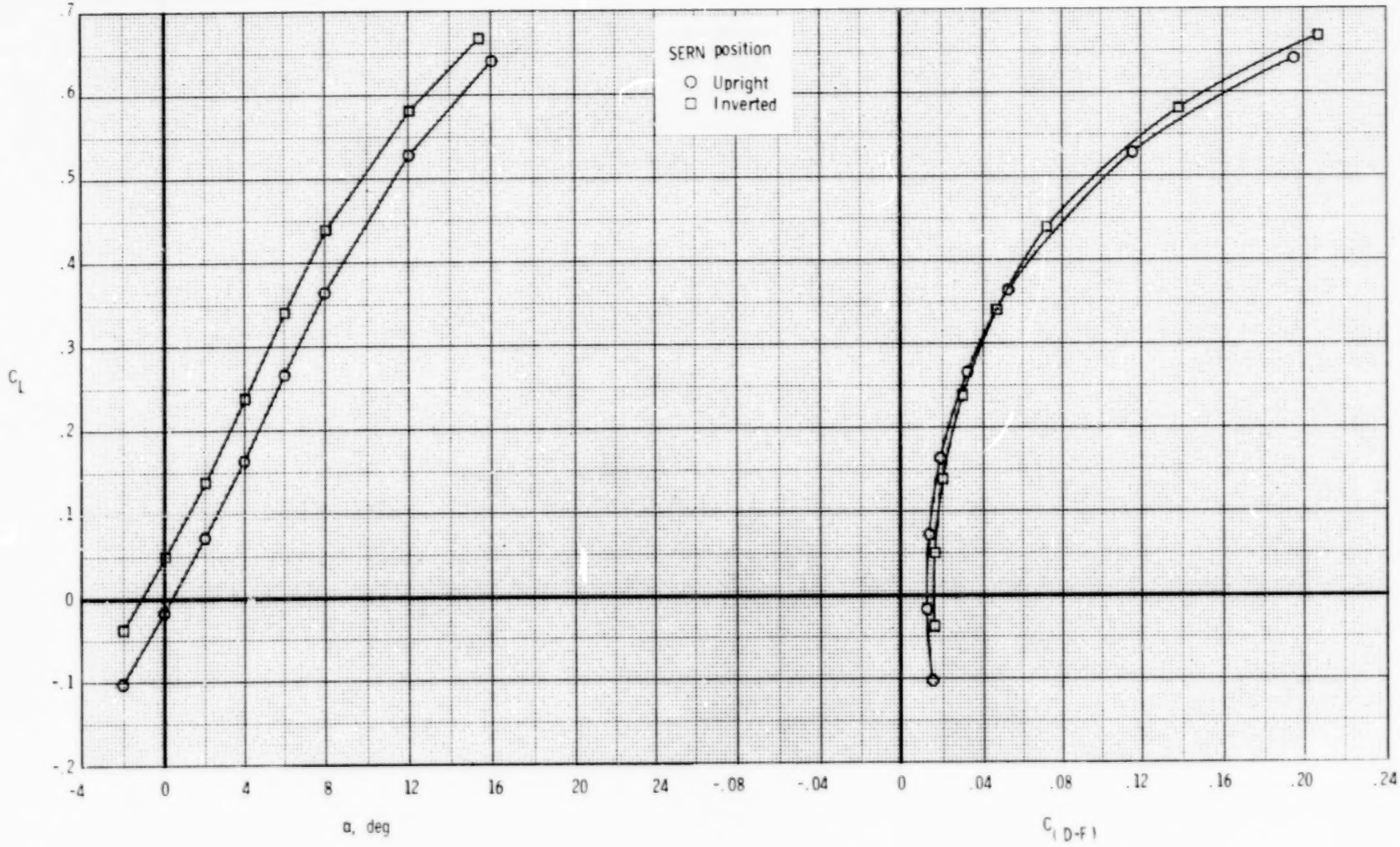
(a) $\delta_v = -5^o$.

Figure 55.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 0.60; NPR = 1.0.



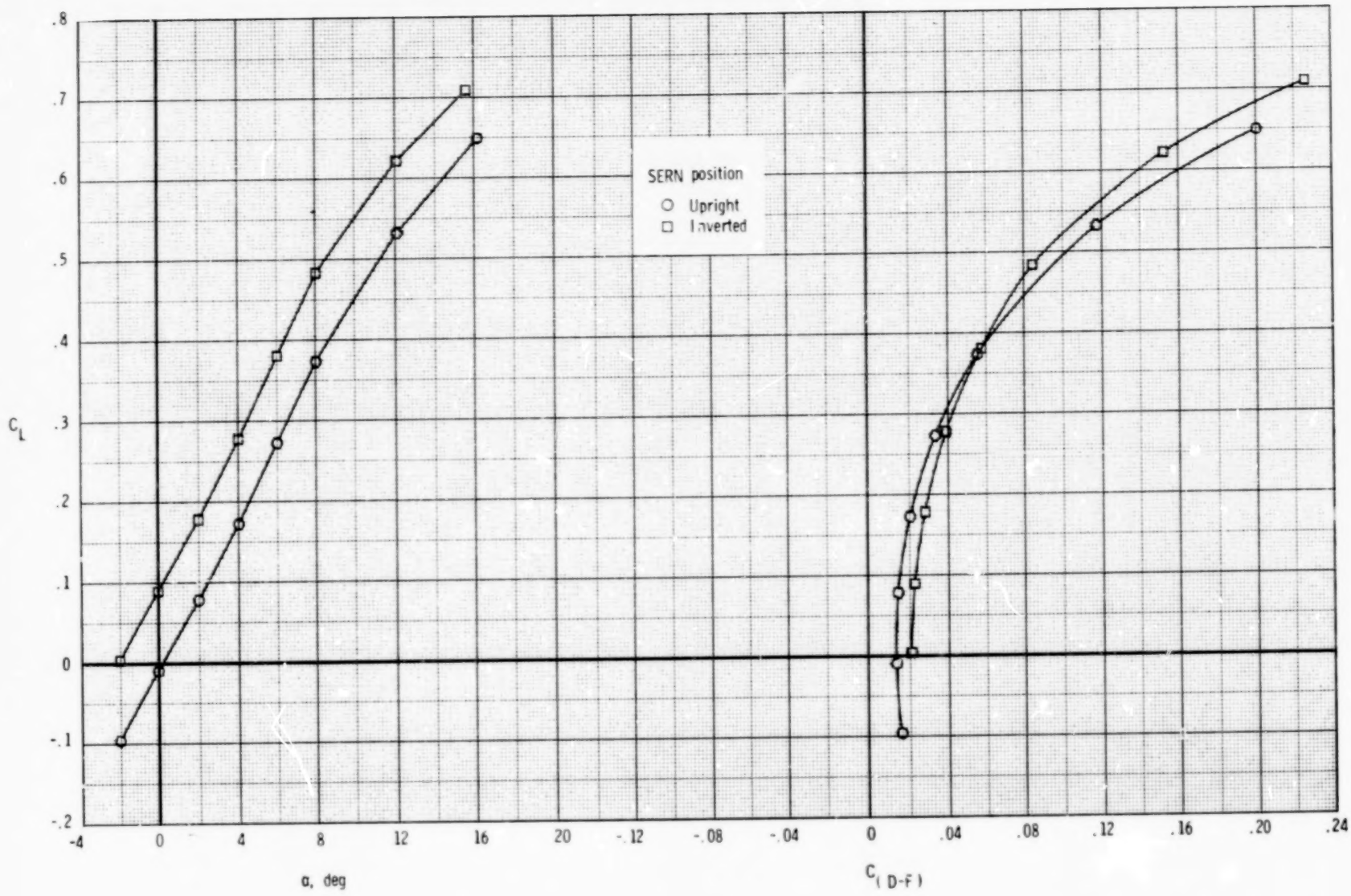
(b) $\delta_v = 0^o$.

Figure 55.- Continued.



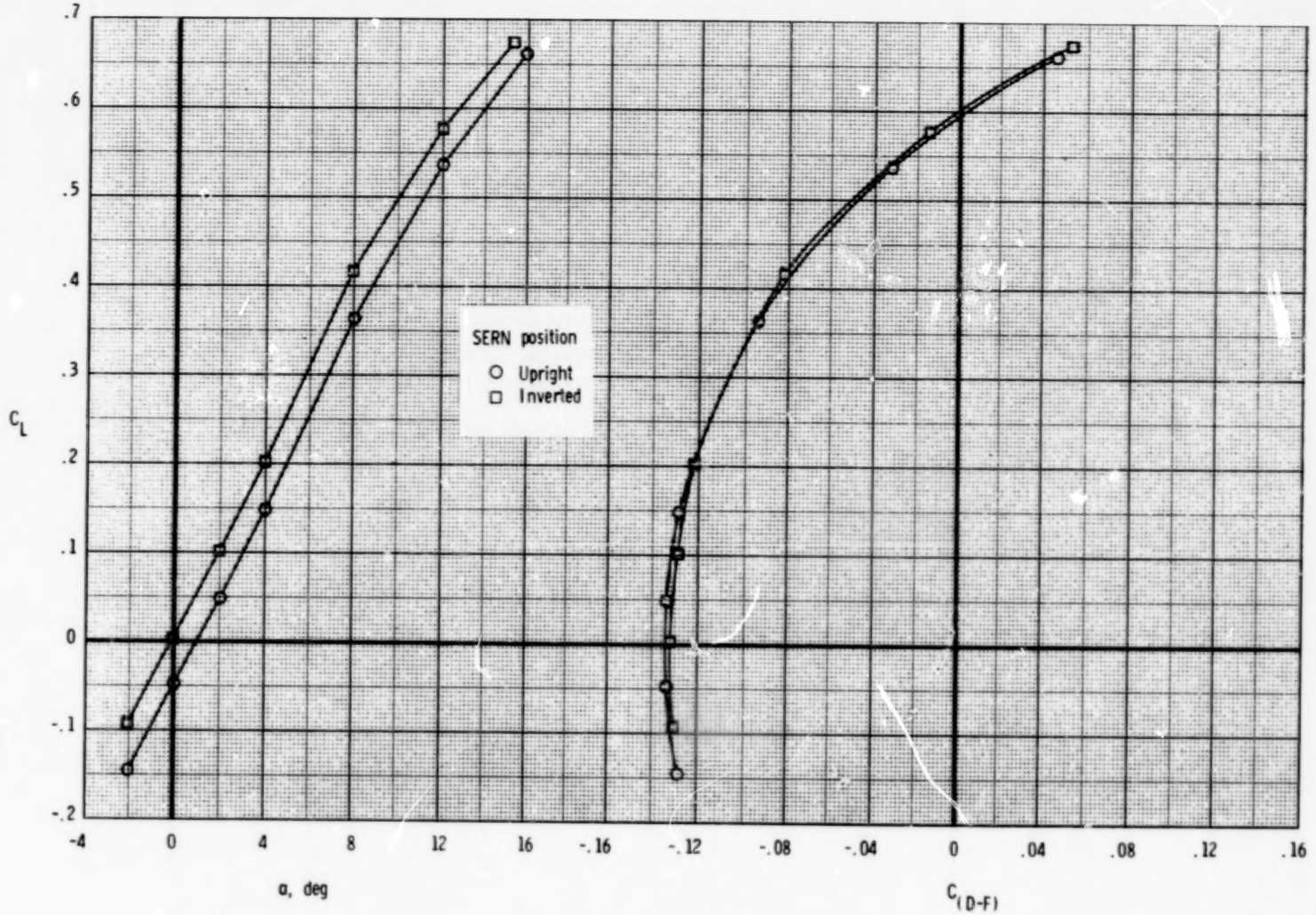
(c) $\delta_v = 10^o$.

Figure 55.- Continued.



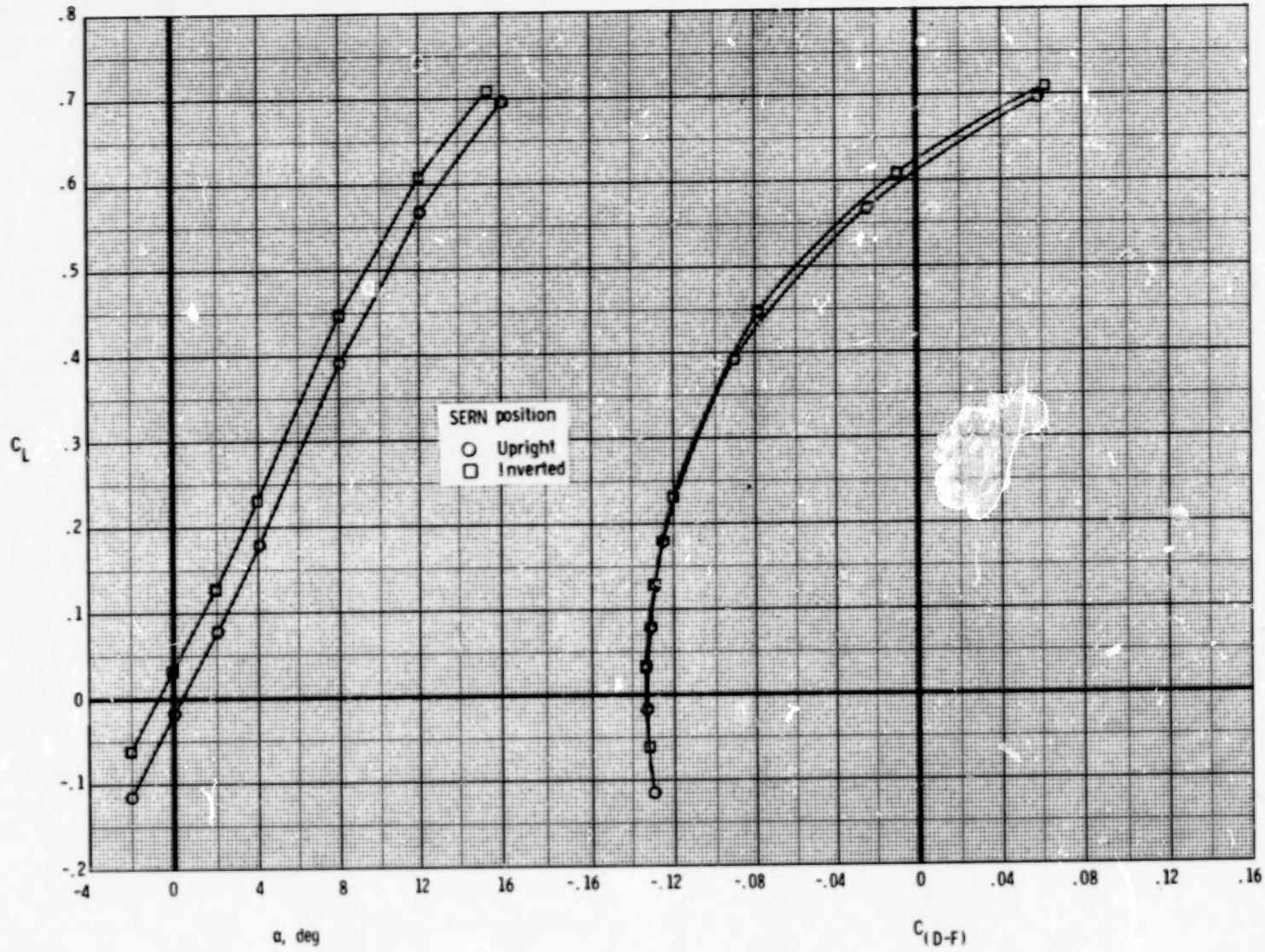
(d) $\delta_v = 20^o$.

Figure 55.- Concluded.



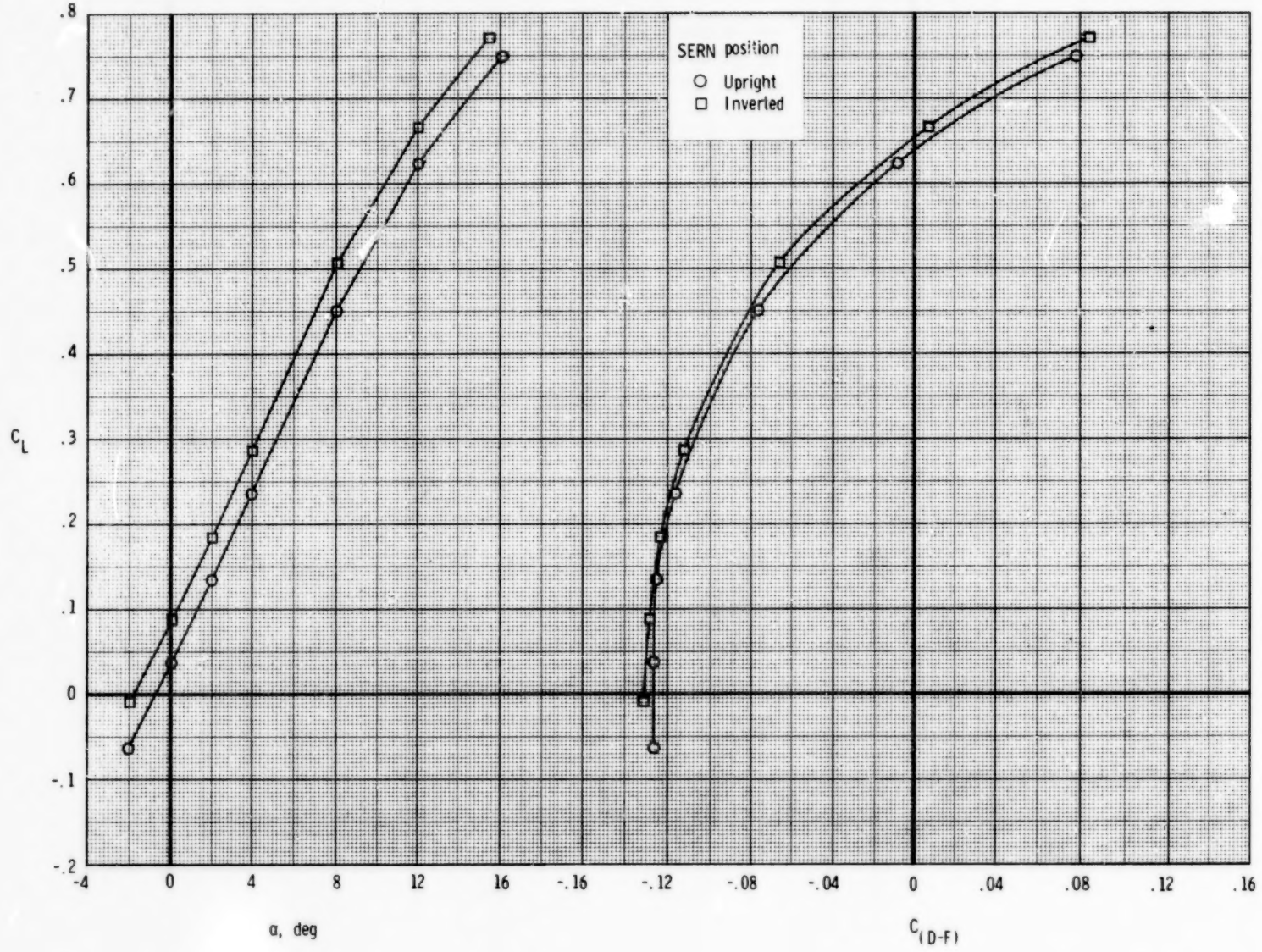
(a) $\delta_v = -5^o$.

Figure 56.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 0.60; NPR = 3.5.



(b) $\delta_v = 0^o$.

Figure 56.- Continued.



(c) $\delta_v = 10^o$.

Figure 56.- Continued.

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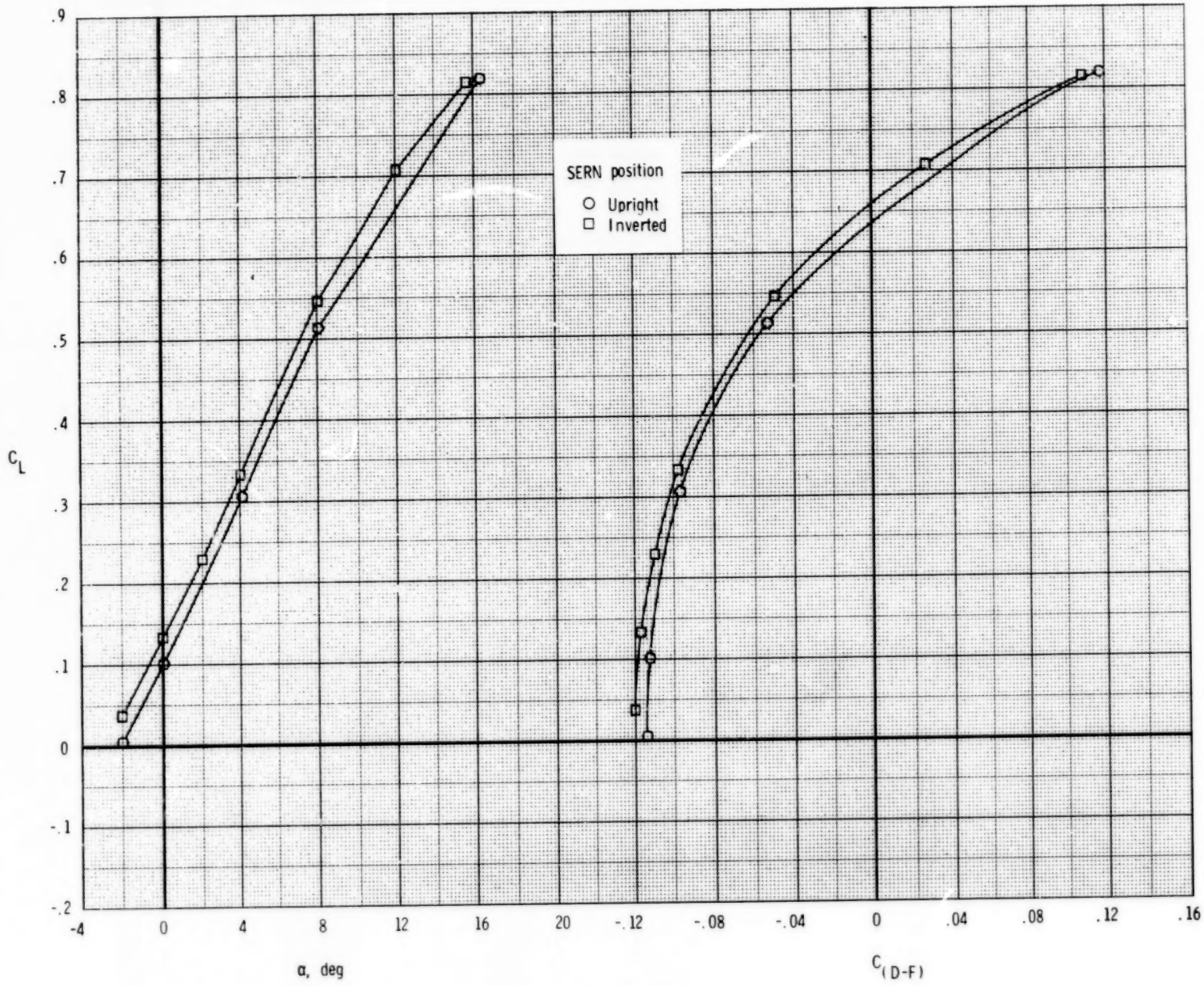
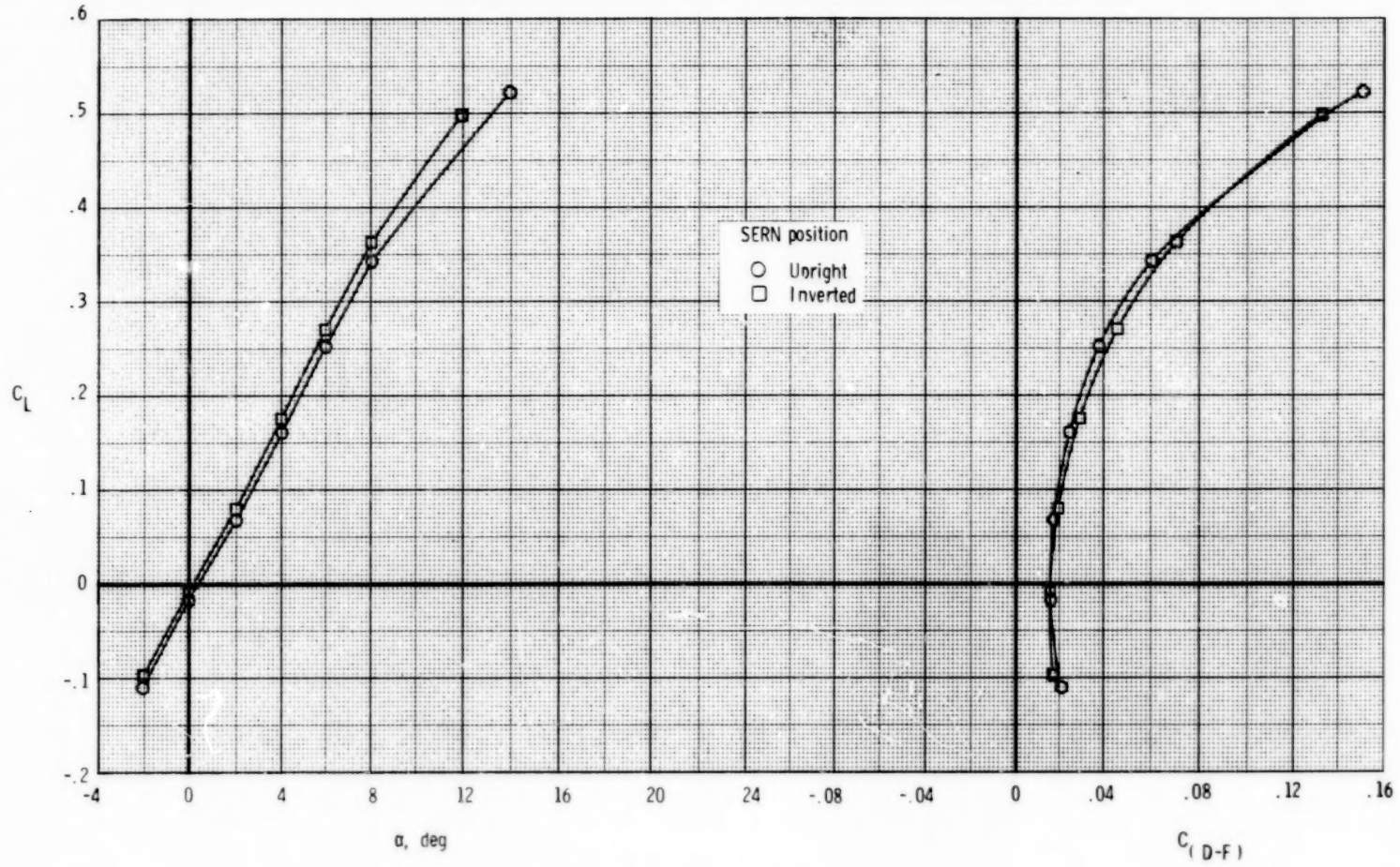


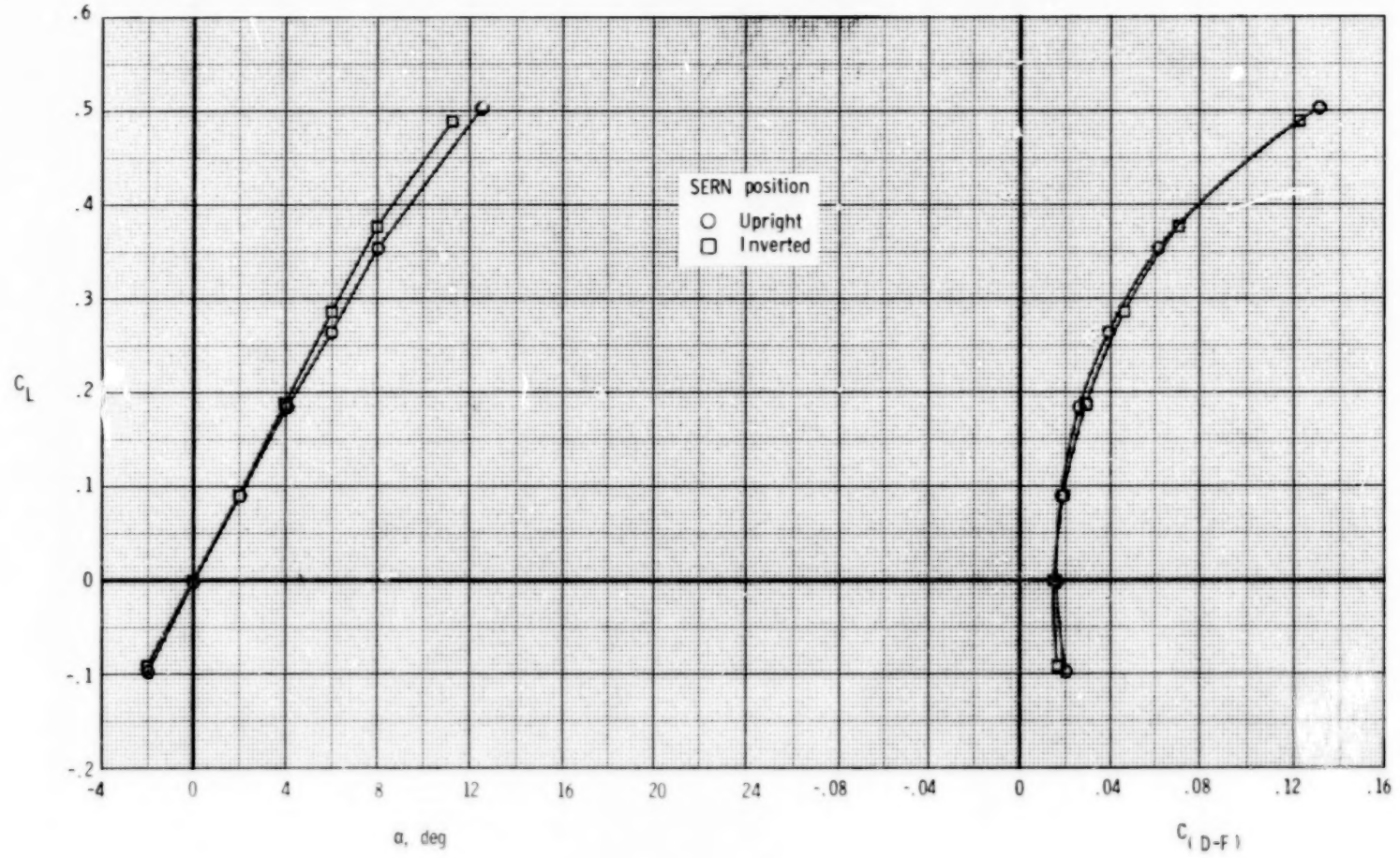
(d) $\delta_v = 20^o$.

Figure 56.- Concluded.



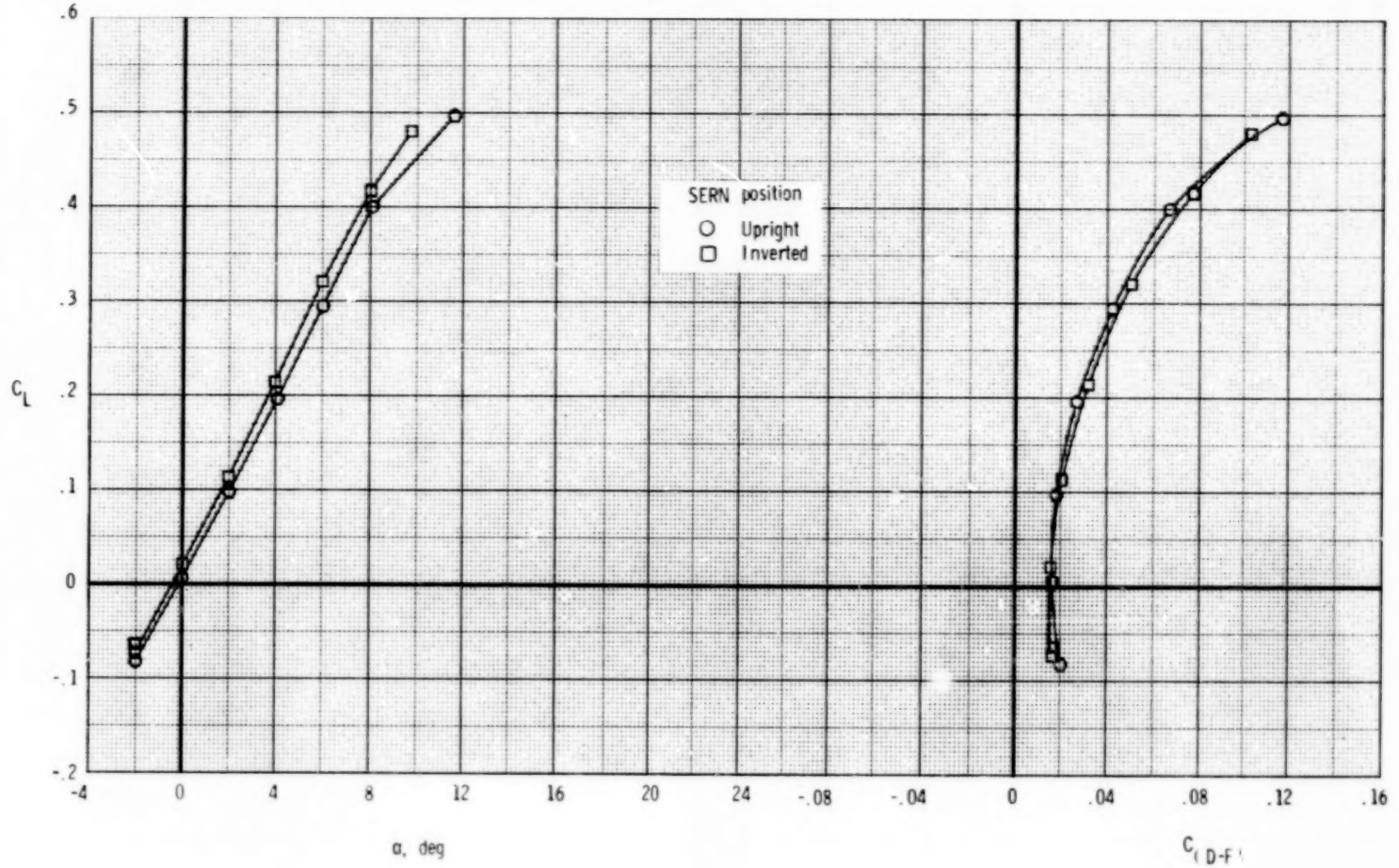
(a) $\delta_v = -5^o$.

Figure 57.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 0.90; NPR = 1.0.



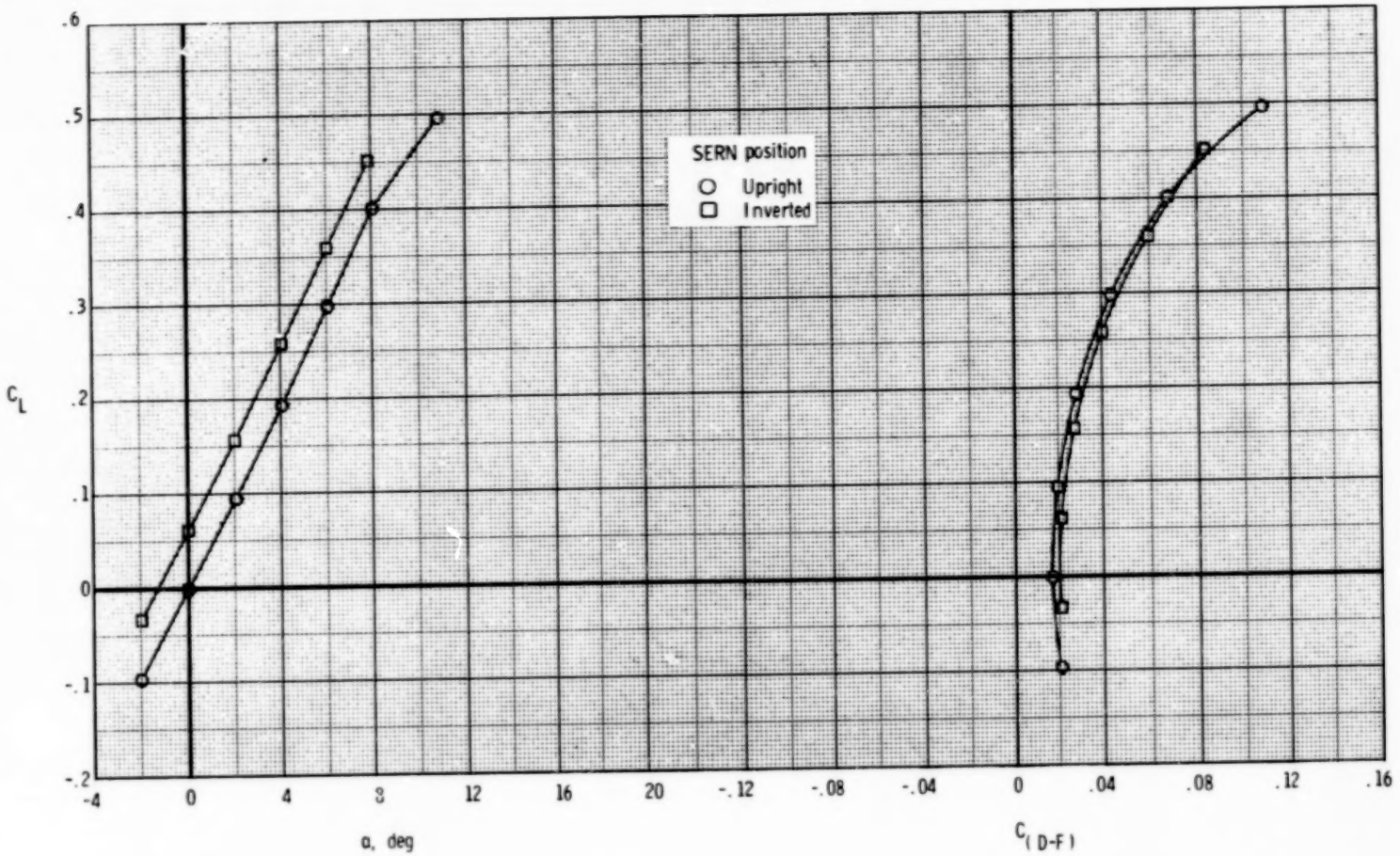
(b) $\delta_v = 0^o$.

Figure 57.- Continued.



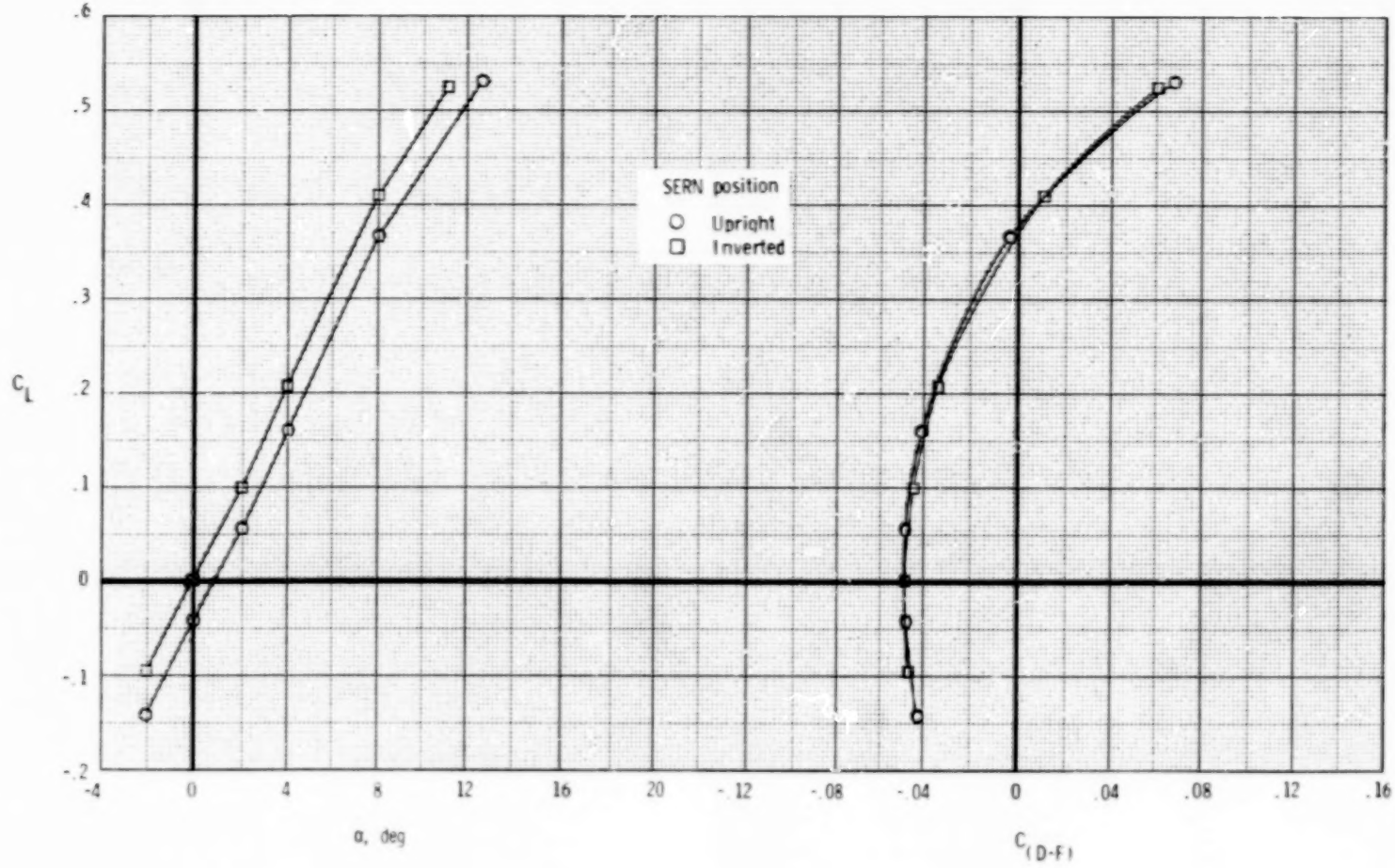
(c) $\delta_v = 10°$.

Figure 57.- Continued.



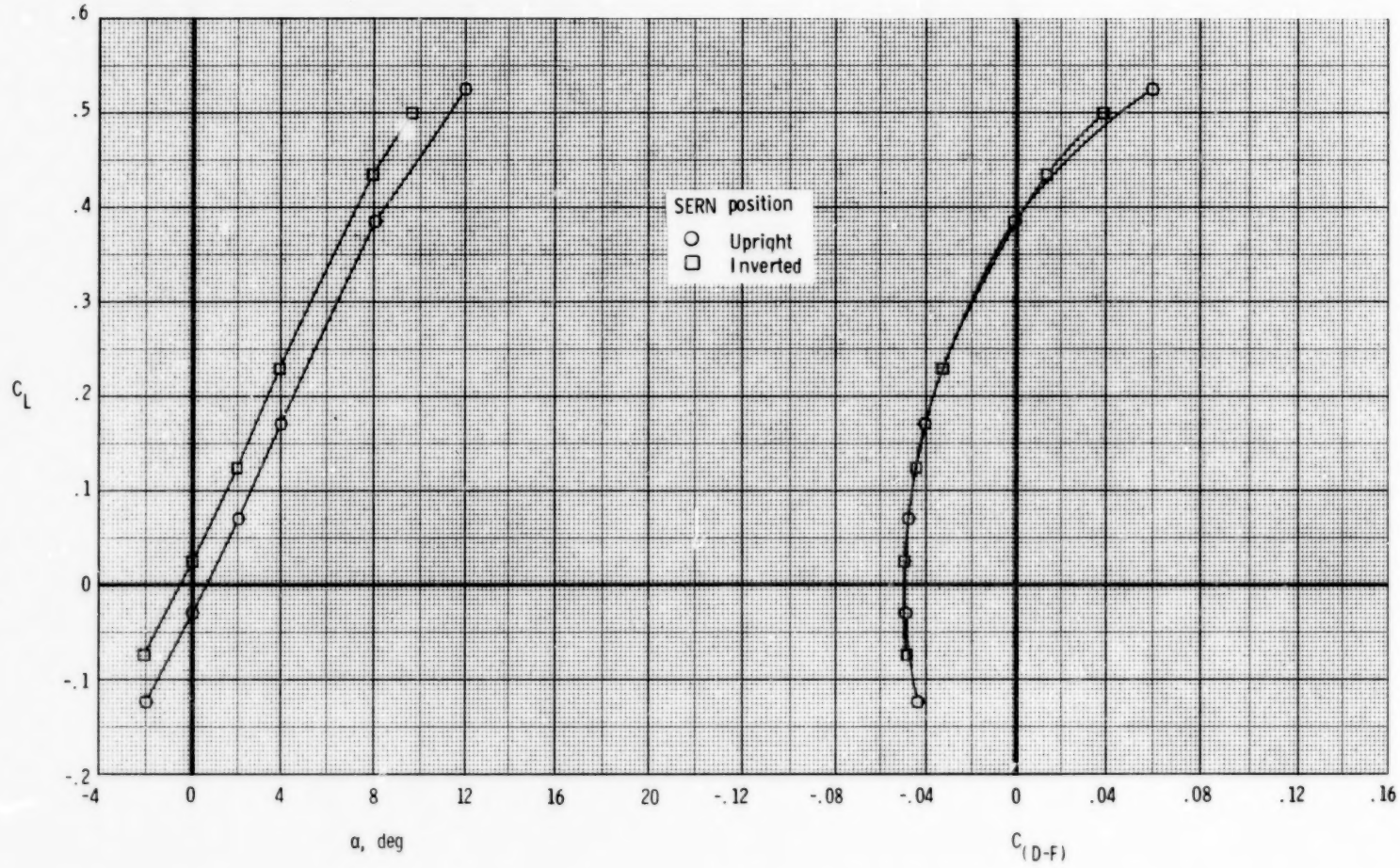
(d) $\delta_v = 20^o$.

Figure 57.- Concluded.



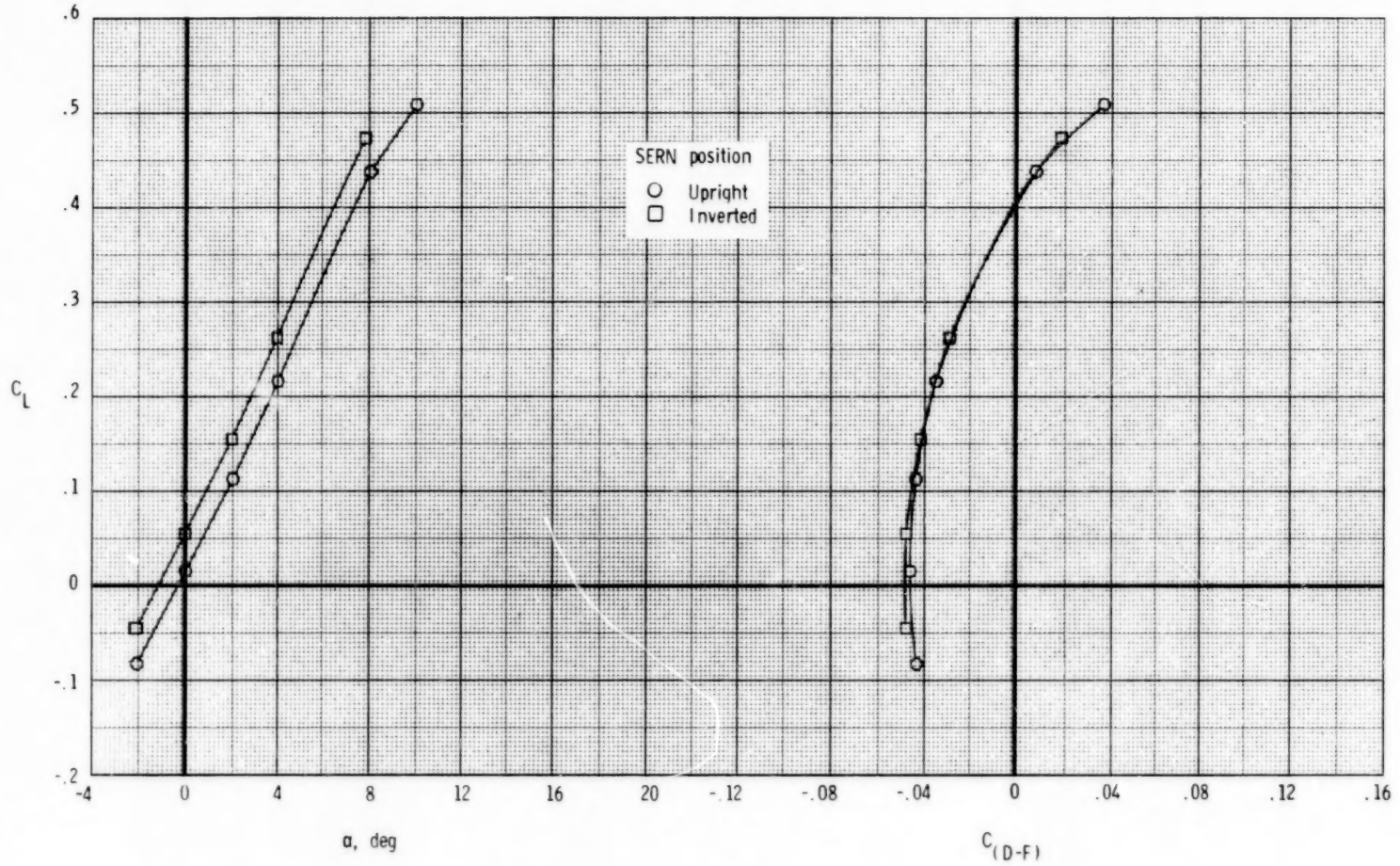
(a) $\delta_v = -5°$.

Figure 58.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 0.90; NPR = 3.5.



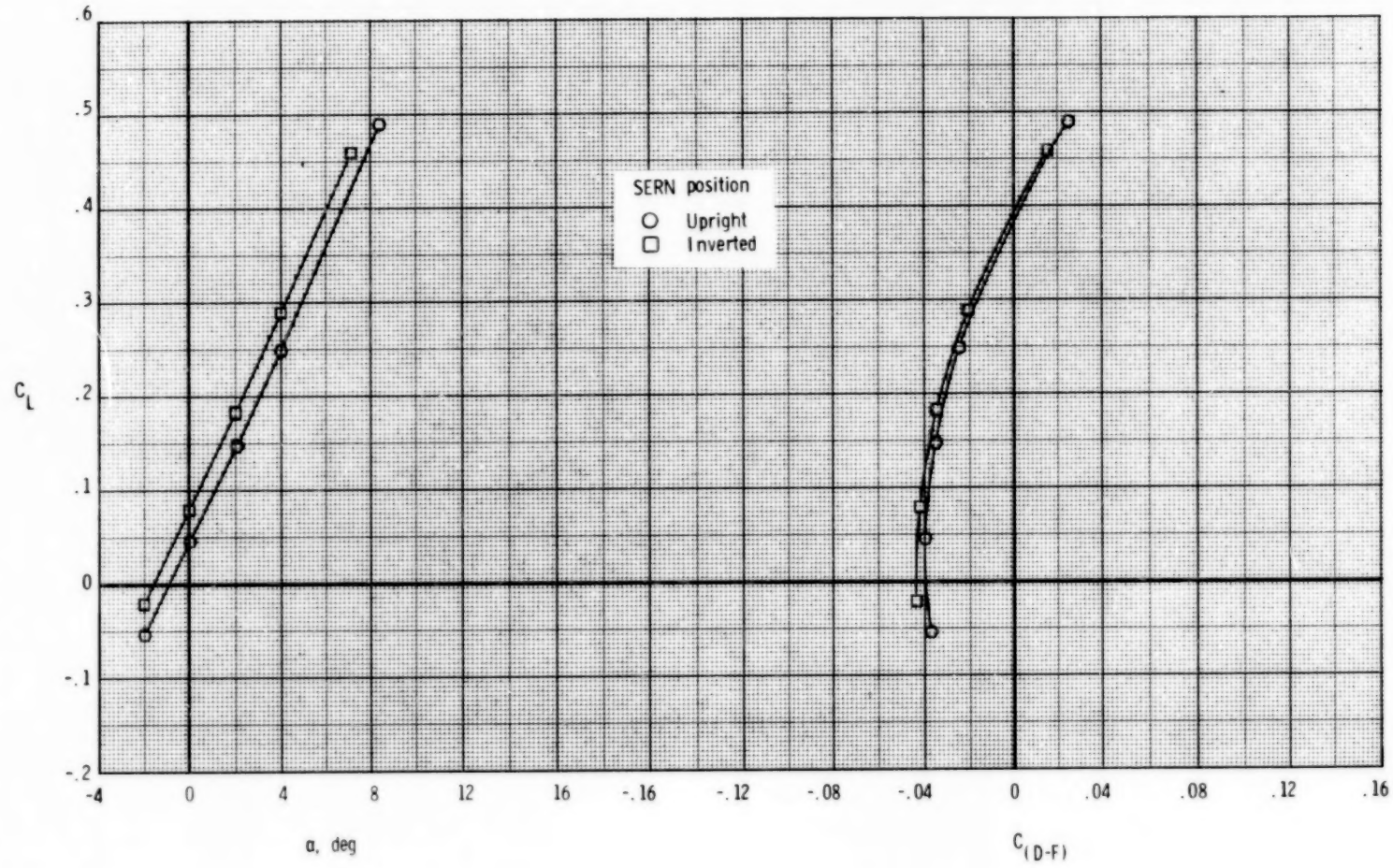
(b) $\delta_v = 0^o$.

Figure 58.- Continued.



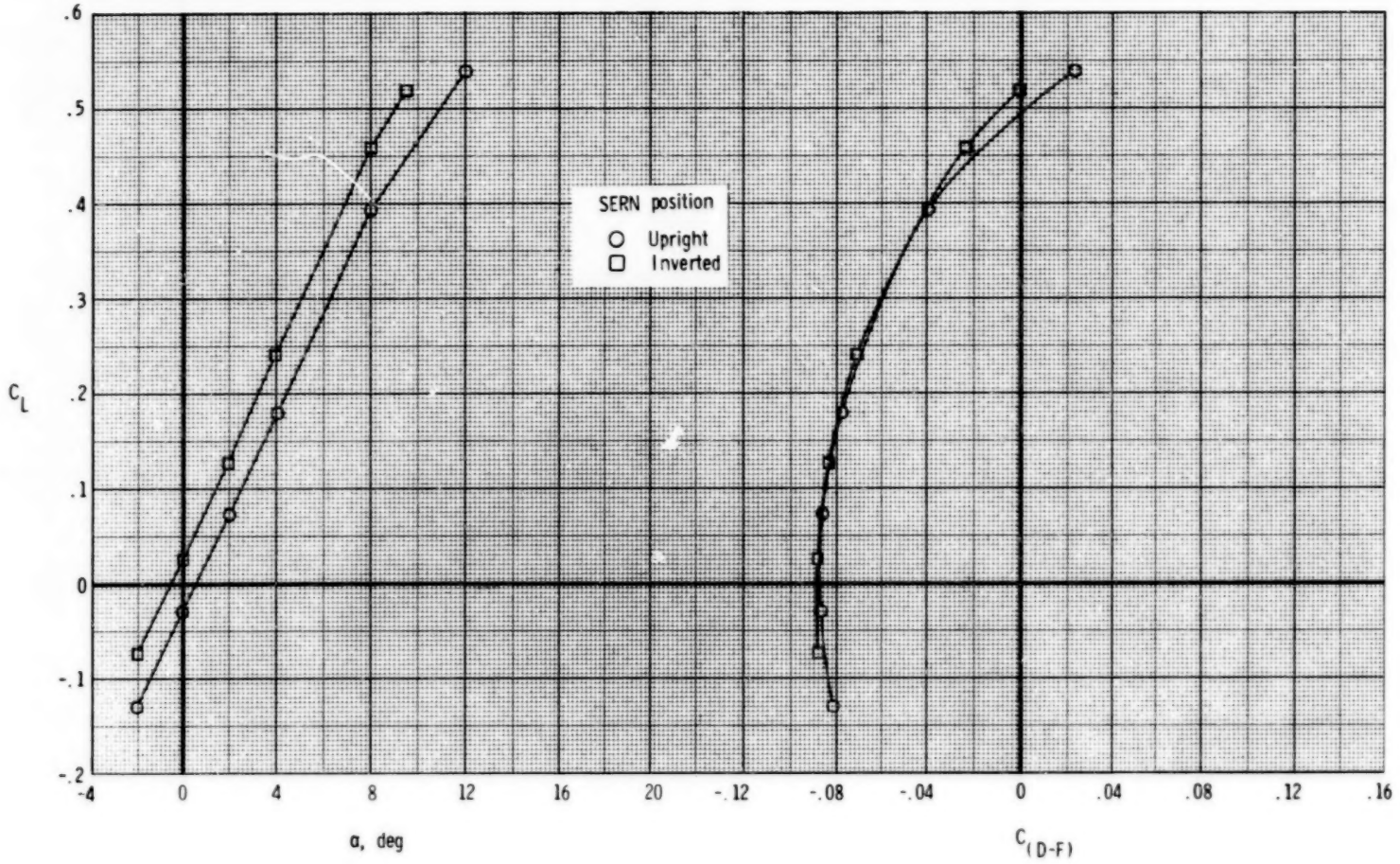
(c) $\delta_v = 10^o$.

Figure 58.- Continued.



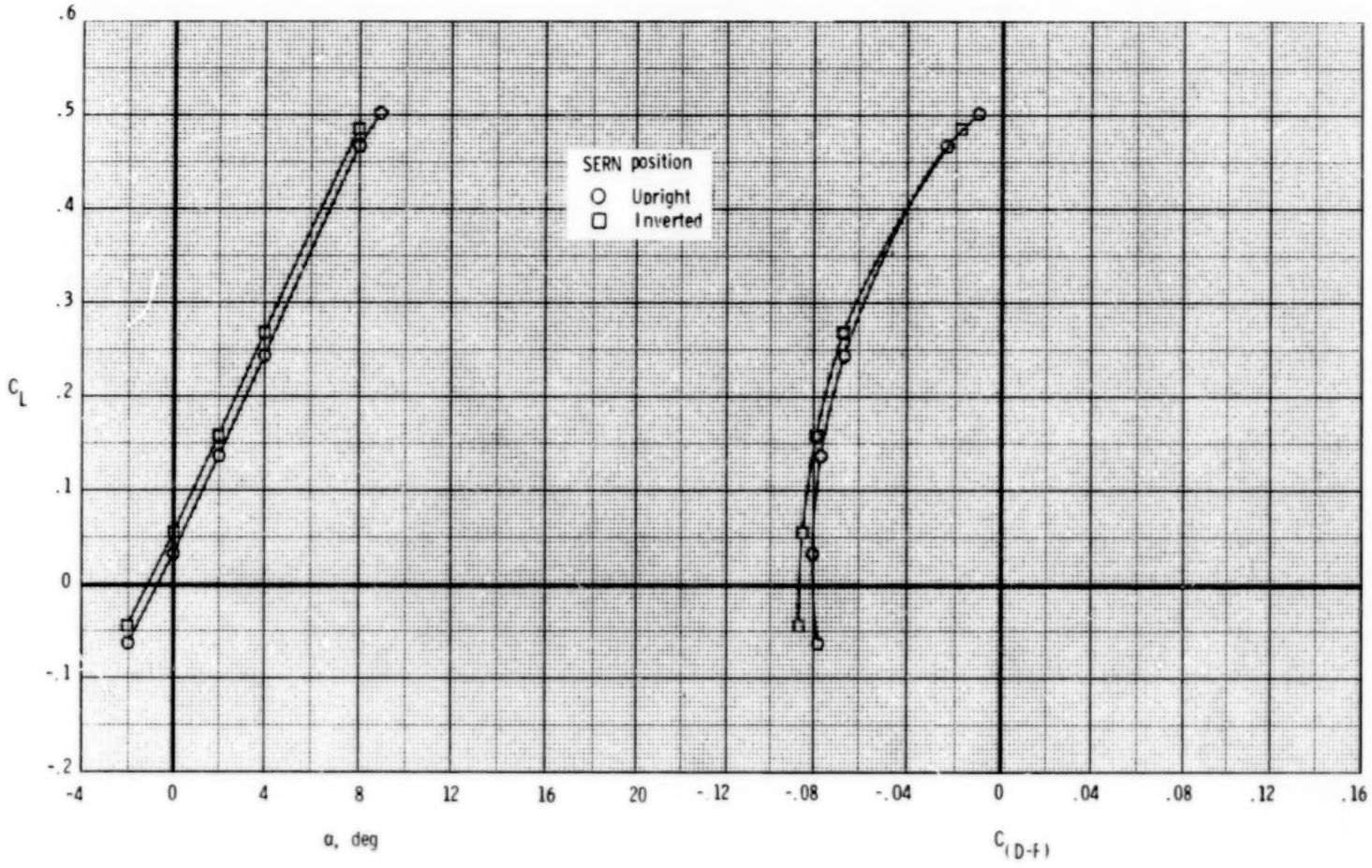
(d) $\delta_v = 20^o$.

Figure 58.- Concluded.



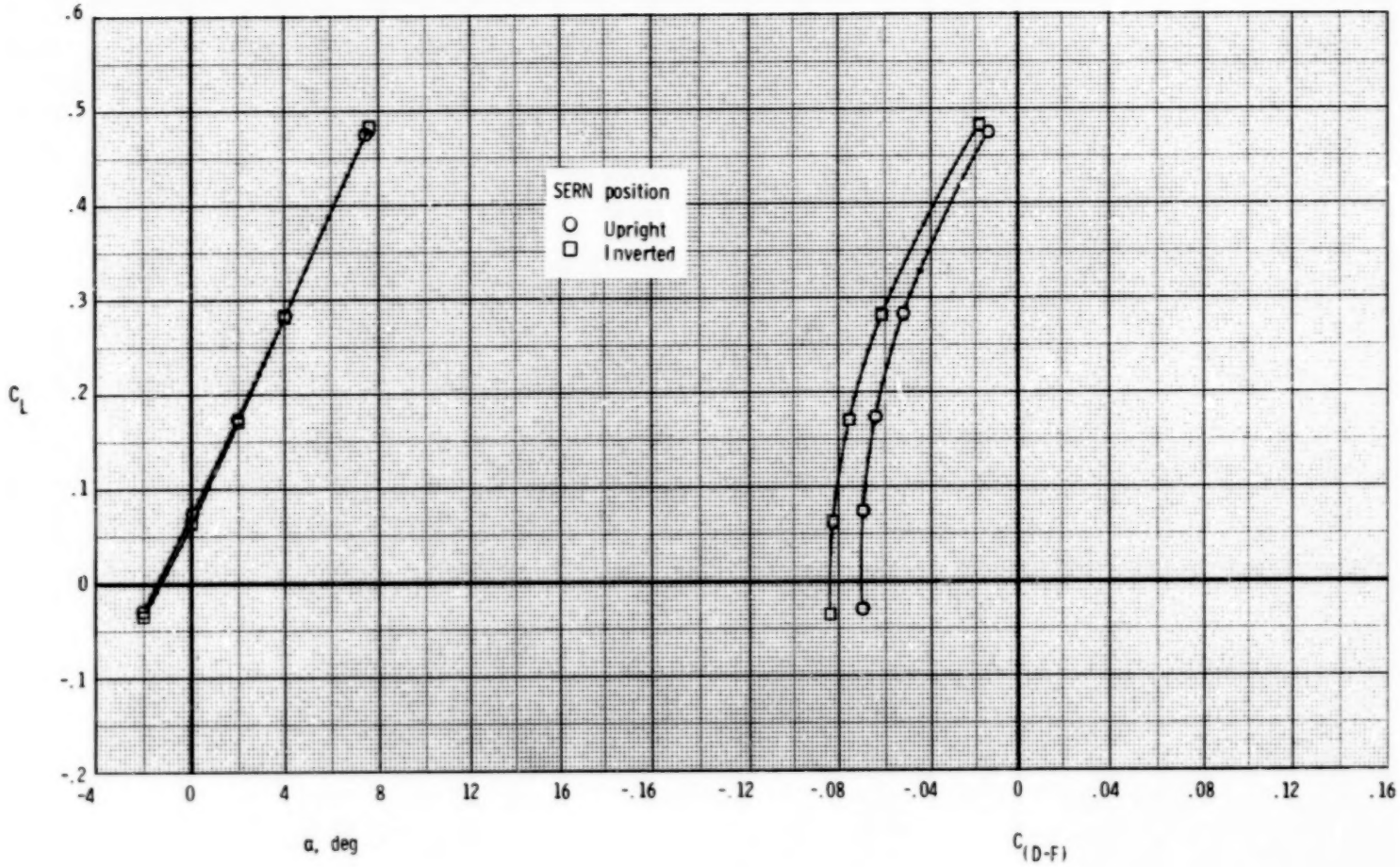
(a) $\delta_v = 0^o$.

Figure 59.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 0.90; NPR = 5.0.



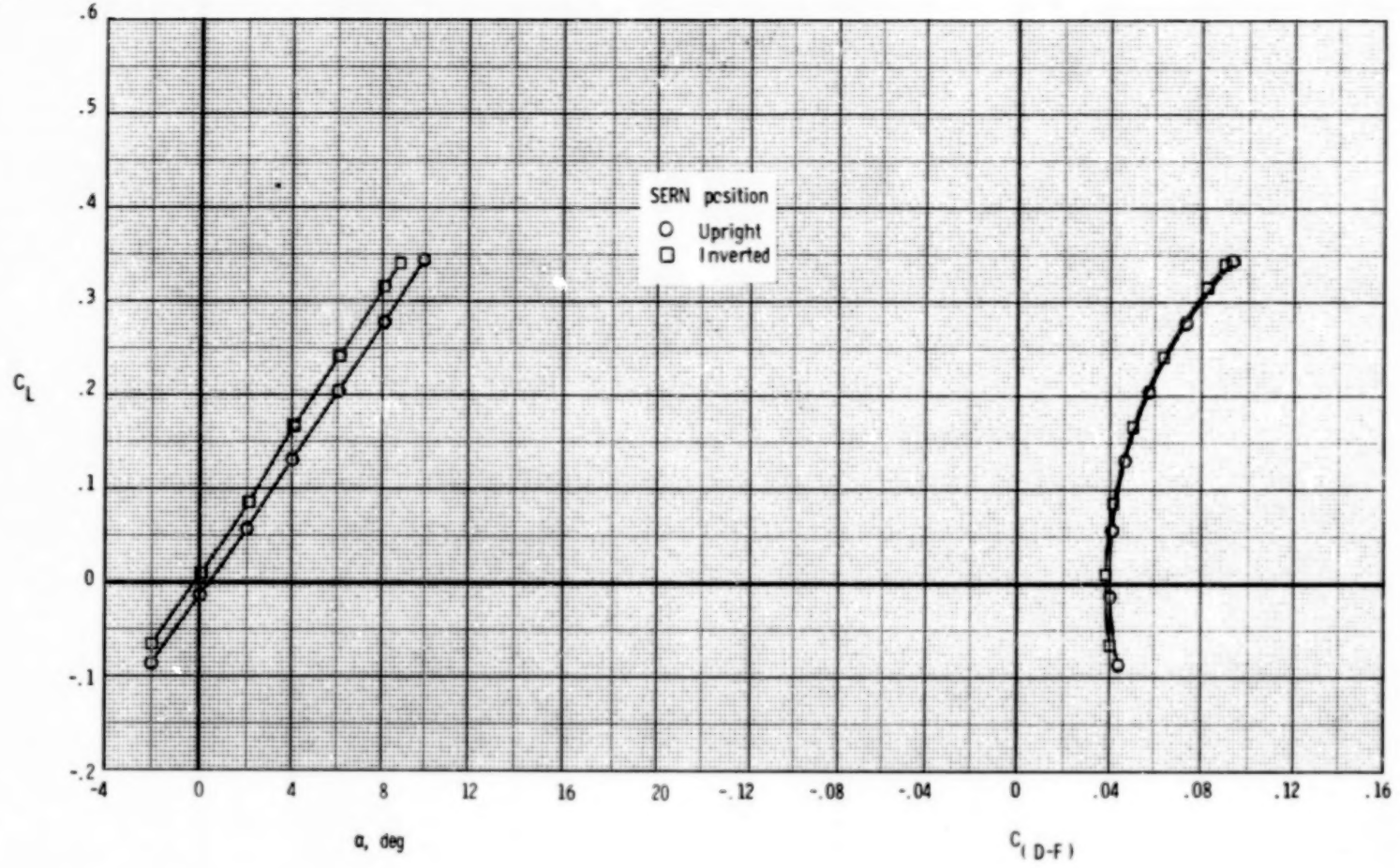
(b) $\delta_v = 10^o$.

Figure 59.- Continued.



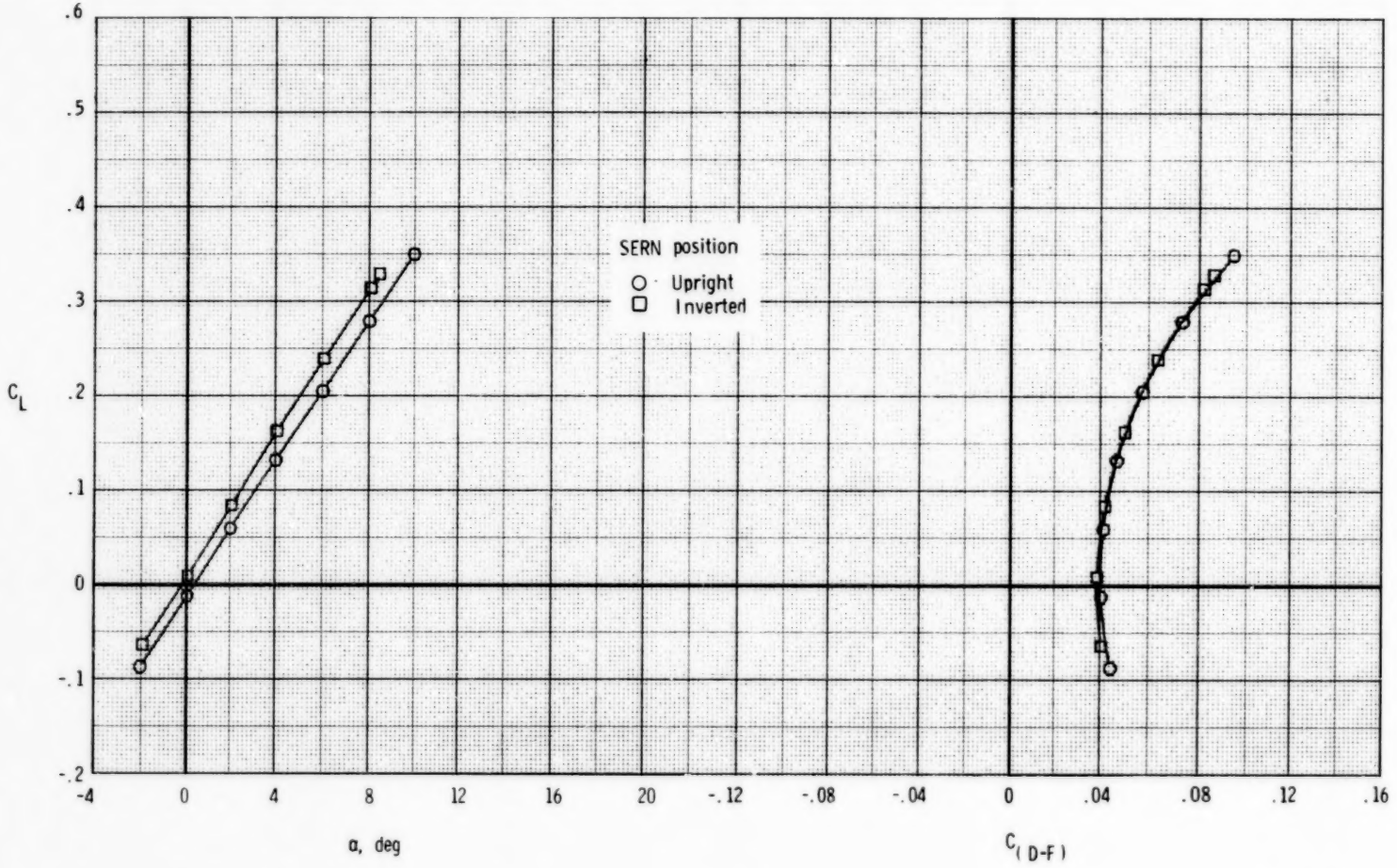
(c) $\delta_v = 20^o$.

Figure 59.- Concluded.



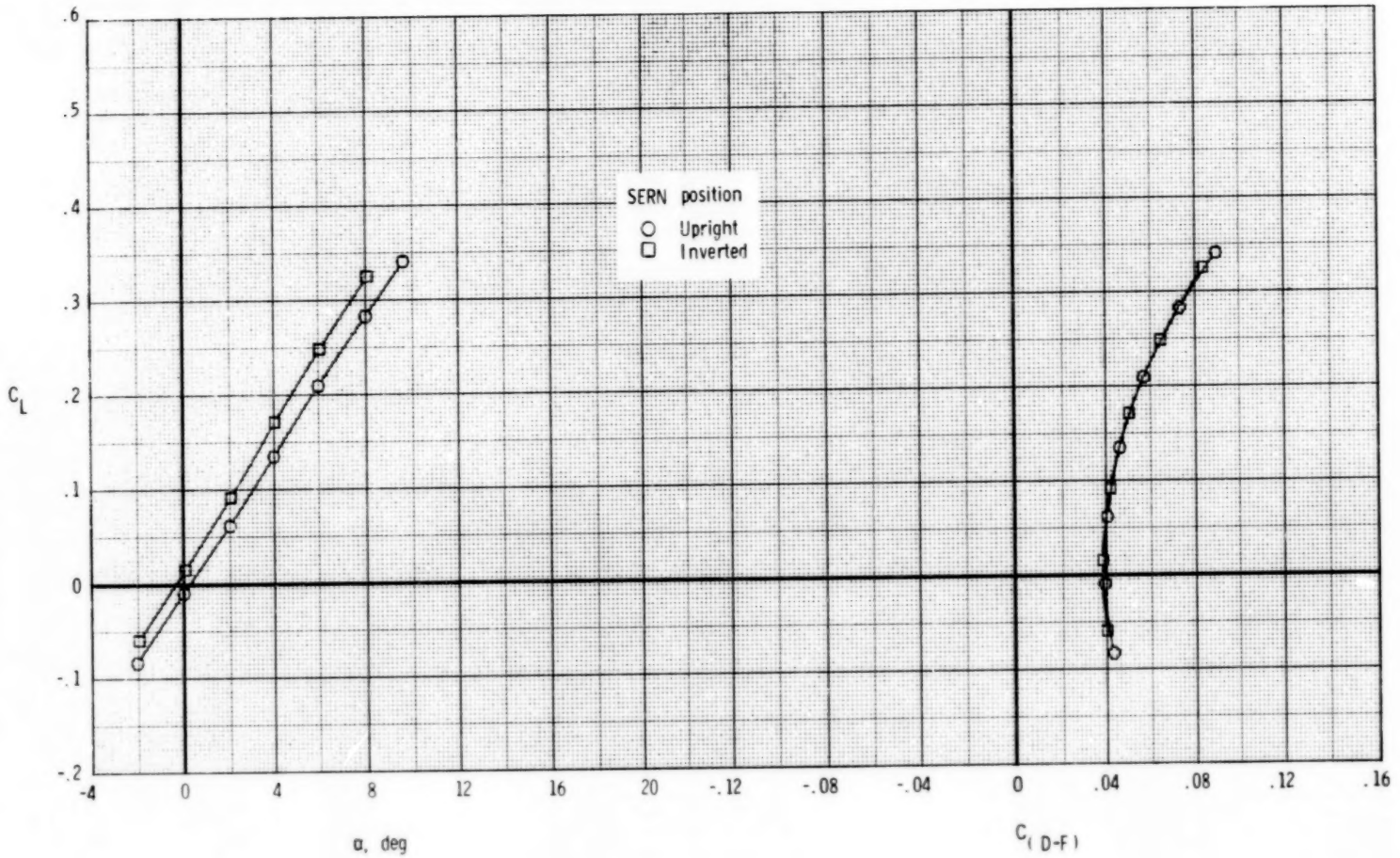
(a) $\delta_v = -5^o$.

Figure 60.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 1.20; NPR = 1.0.



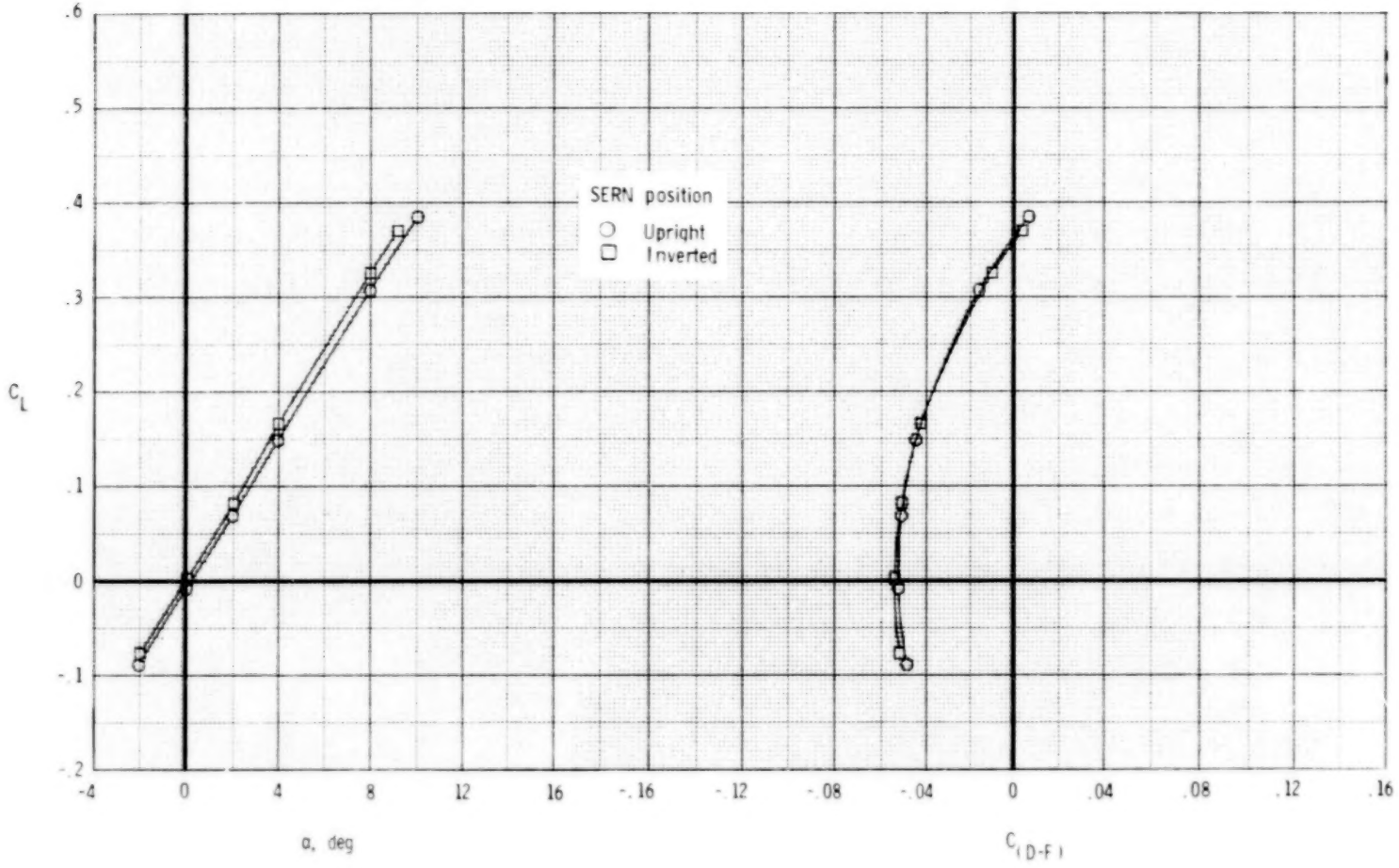
(b) $\delta_v = 0^o$.

Figure 60.- Continued.



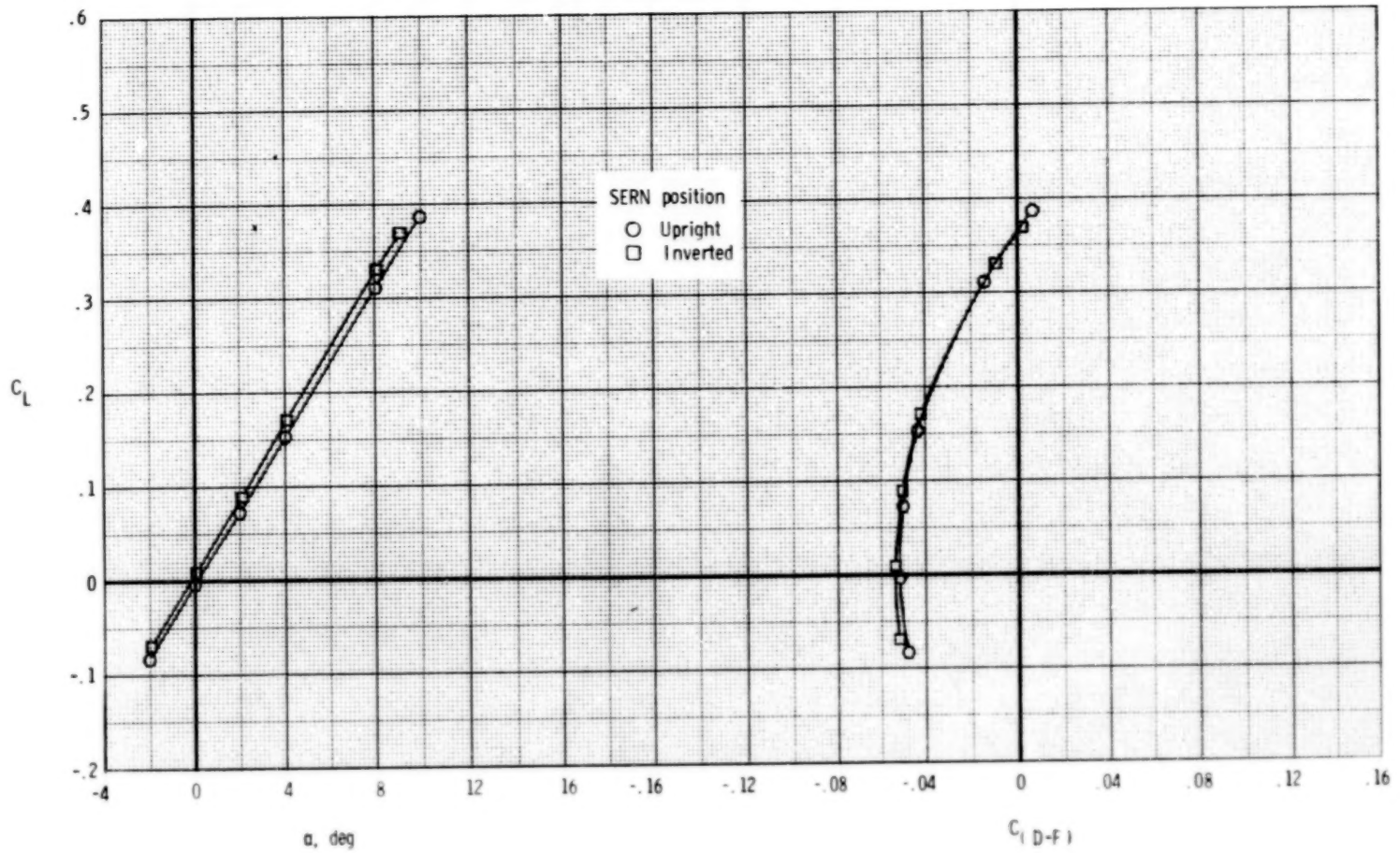
(c) $\delta_v = 10^o$.

Figure 60.- Concluded.



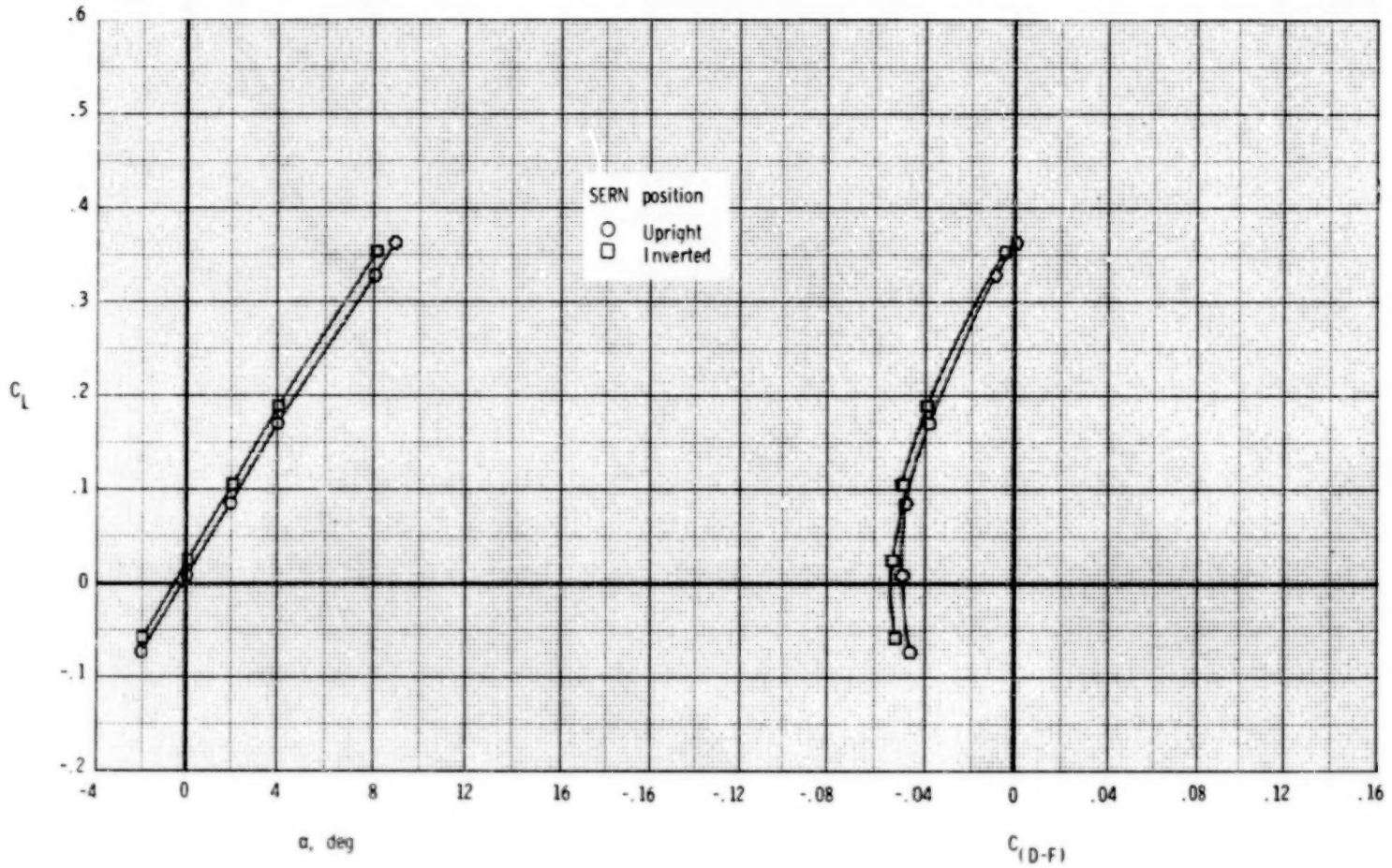
(a) $\delta_v = -5^o$.

Figure 61.- Effect of SERN position on total longitudinal aerodynamic characteristics. Aft-swept wing; dry power; M = 1.20; NPR = 7.0.



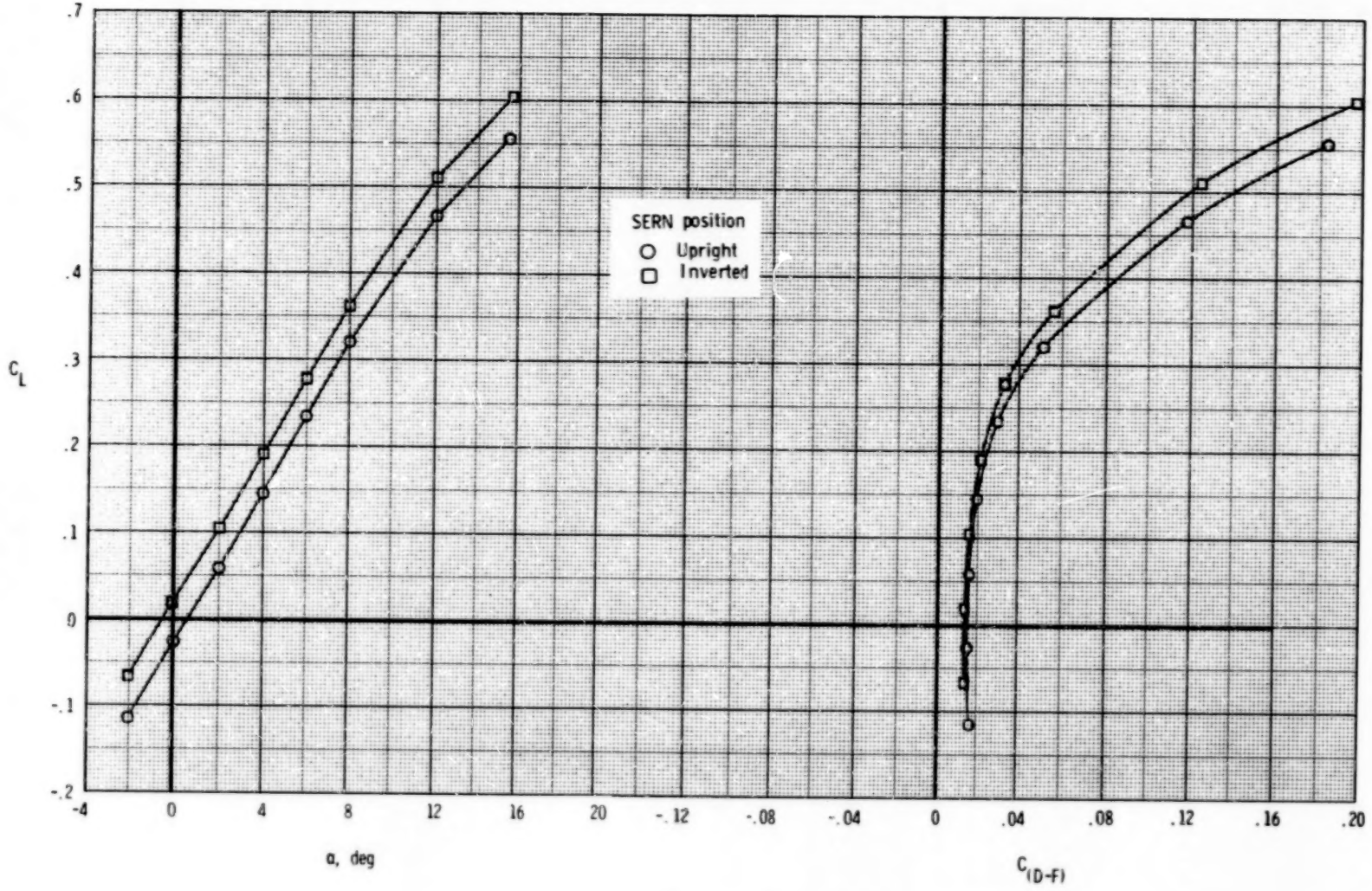
(b) $\delta_v = 0^o$.

Figure 61.- Continued.



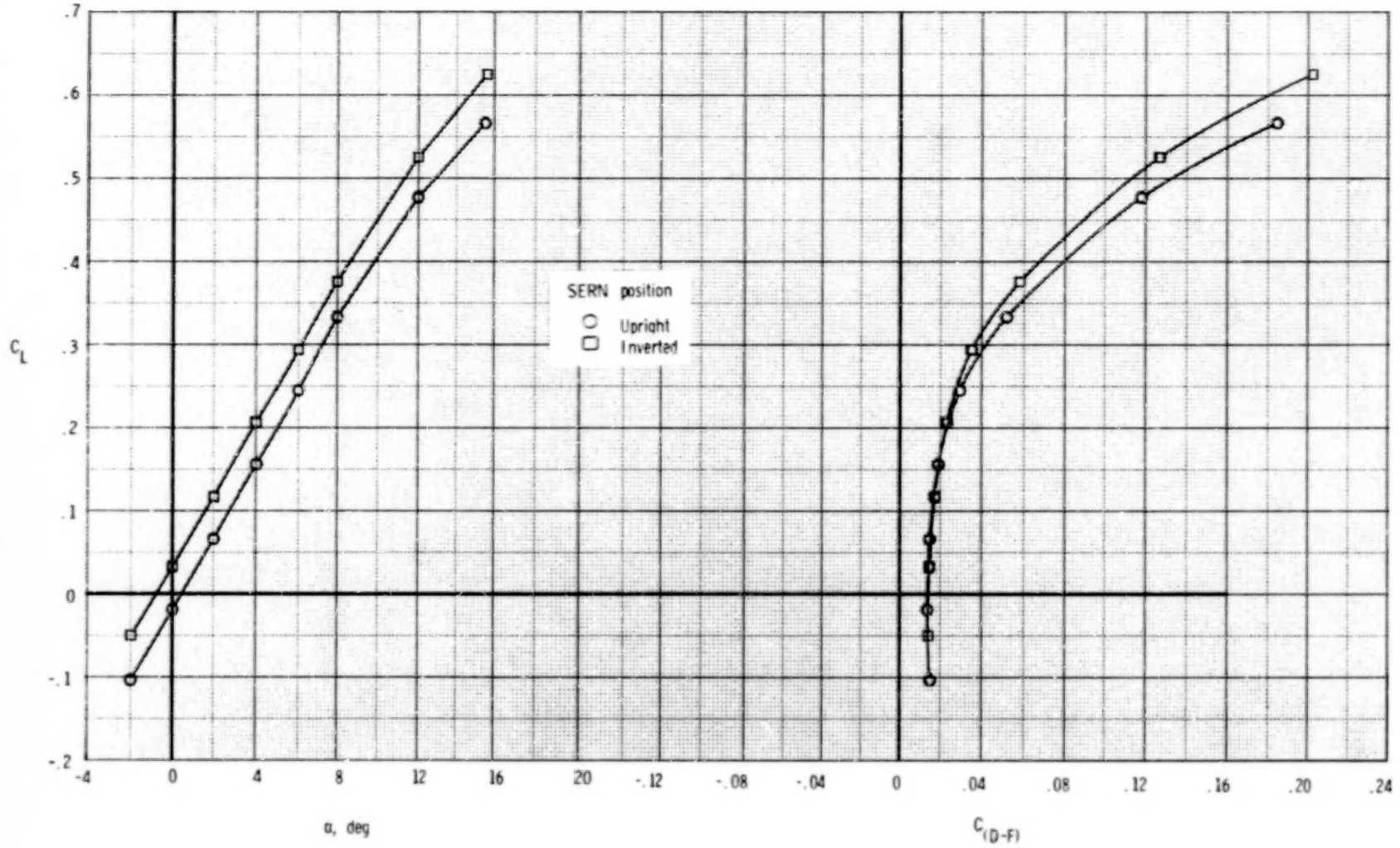
(c) $\delta_v = 10°$.

Figure 61.- Concluded.



(a) $\delta_v = -5^o$.

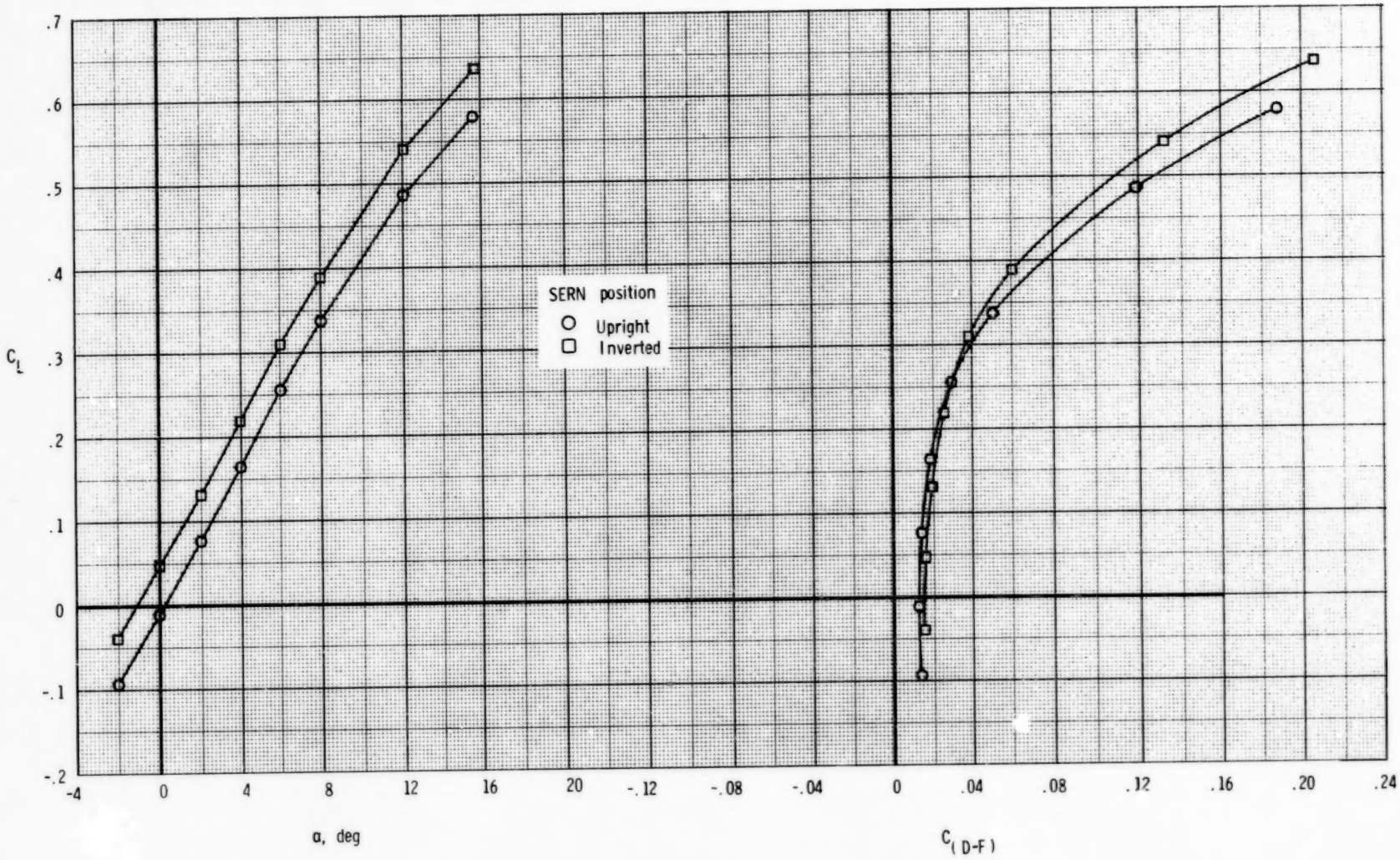
Figure 62.- Effect of SERN position on total longitudinal aerodynamic characteristics. Forward-swept wing; A/B power; M = 0.60; NPR = 1.0.



(b) $\delta_v = 0°$.

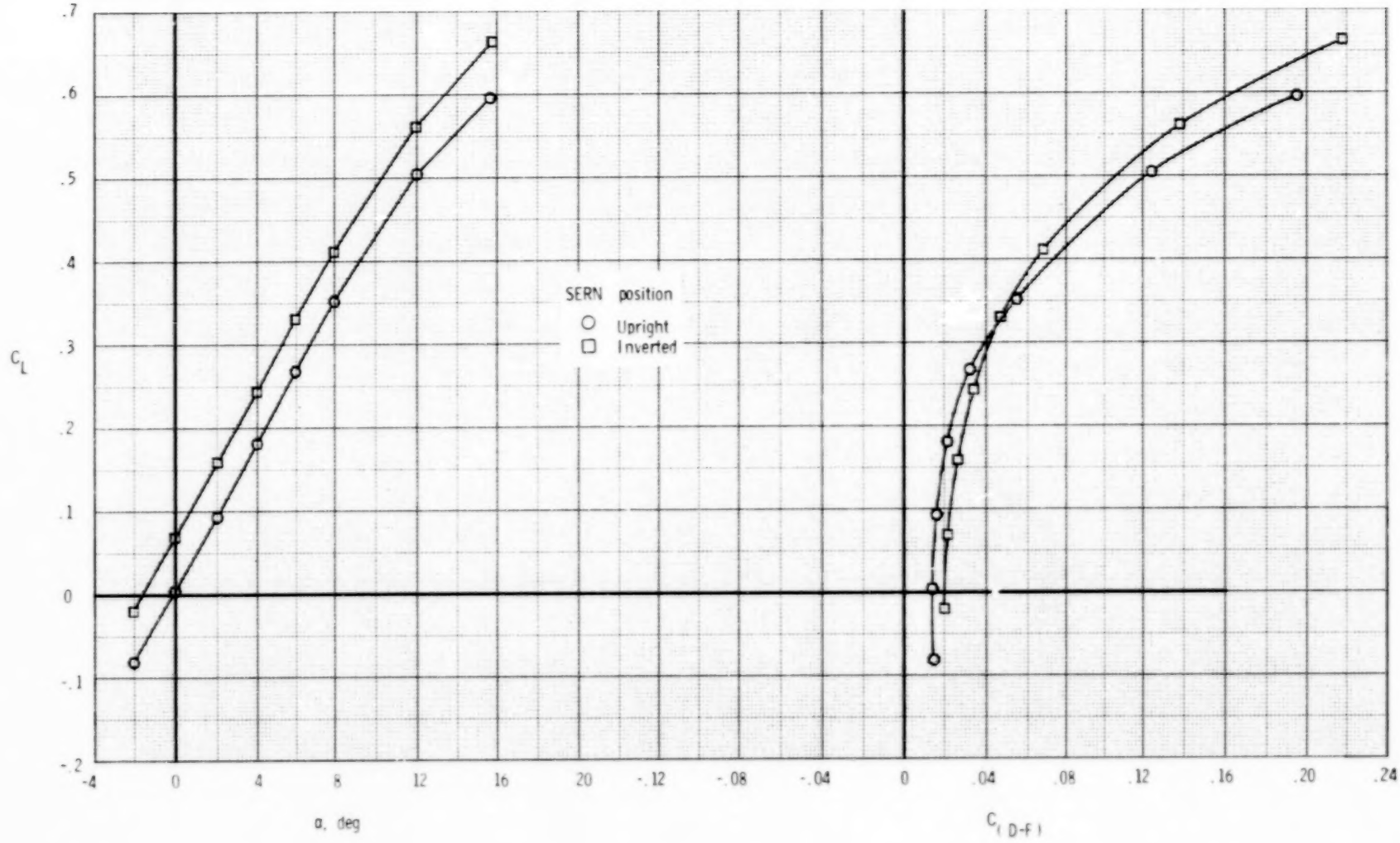
Figure 62.- Continued.

etc



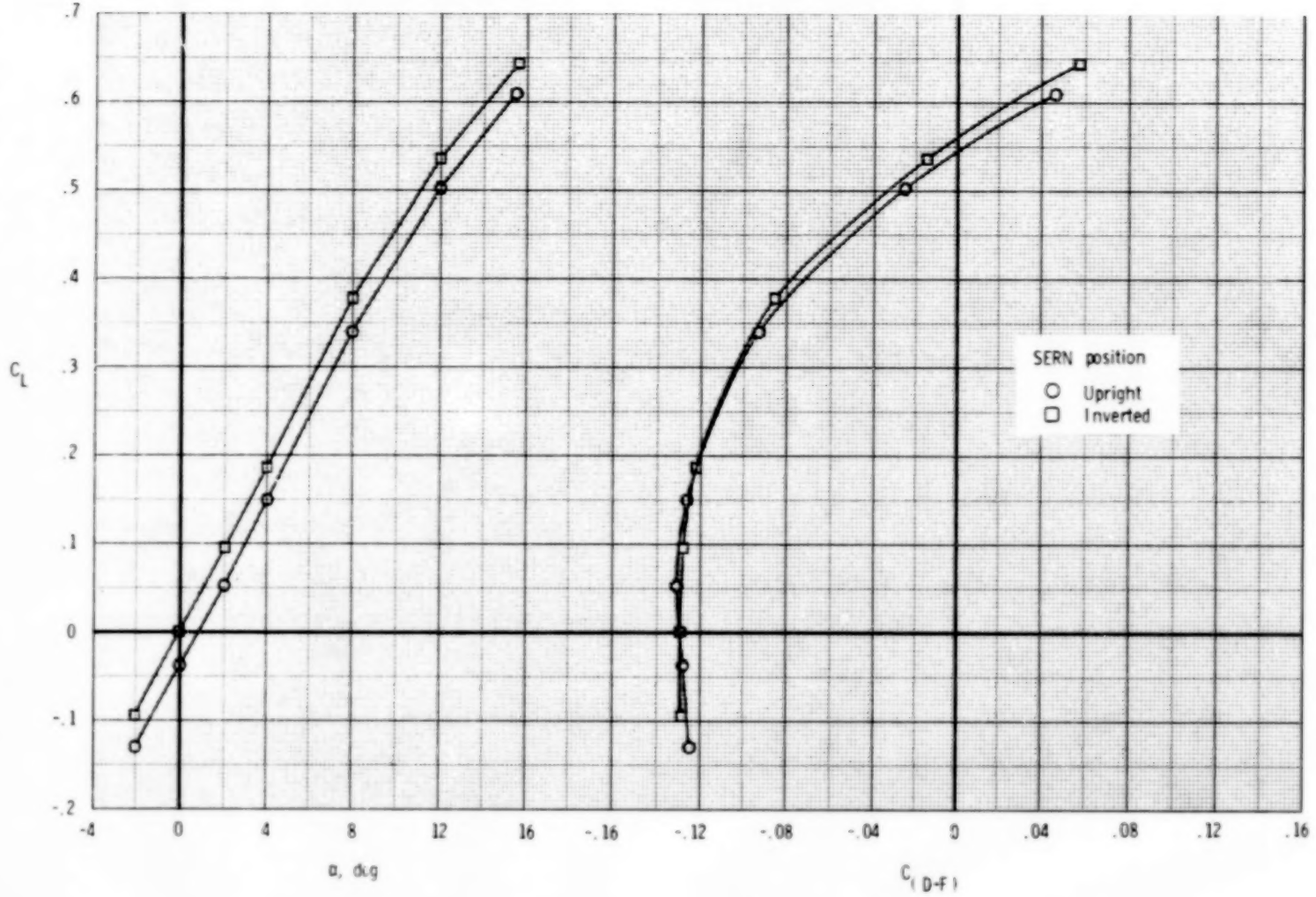
(c) $\delta_v = 10^\circ$.

Figure 62.- Continued.



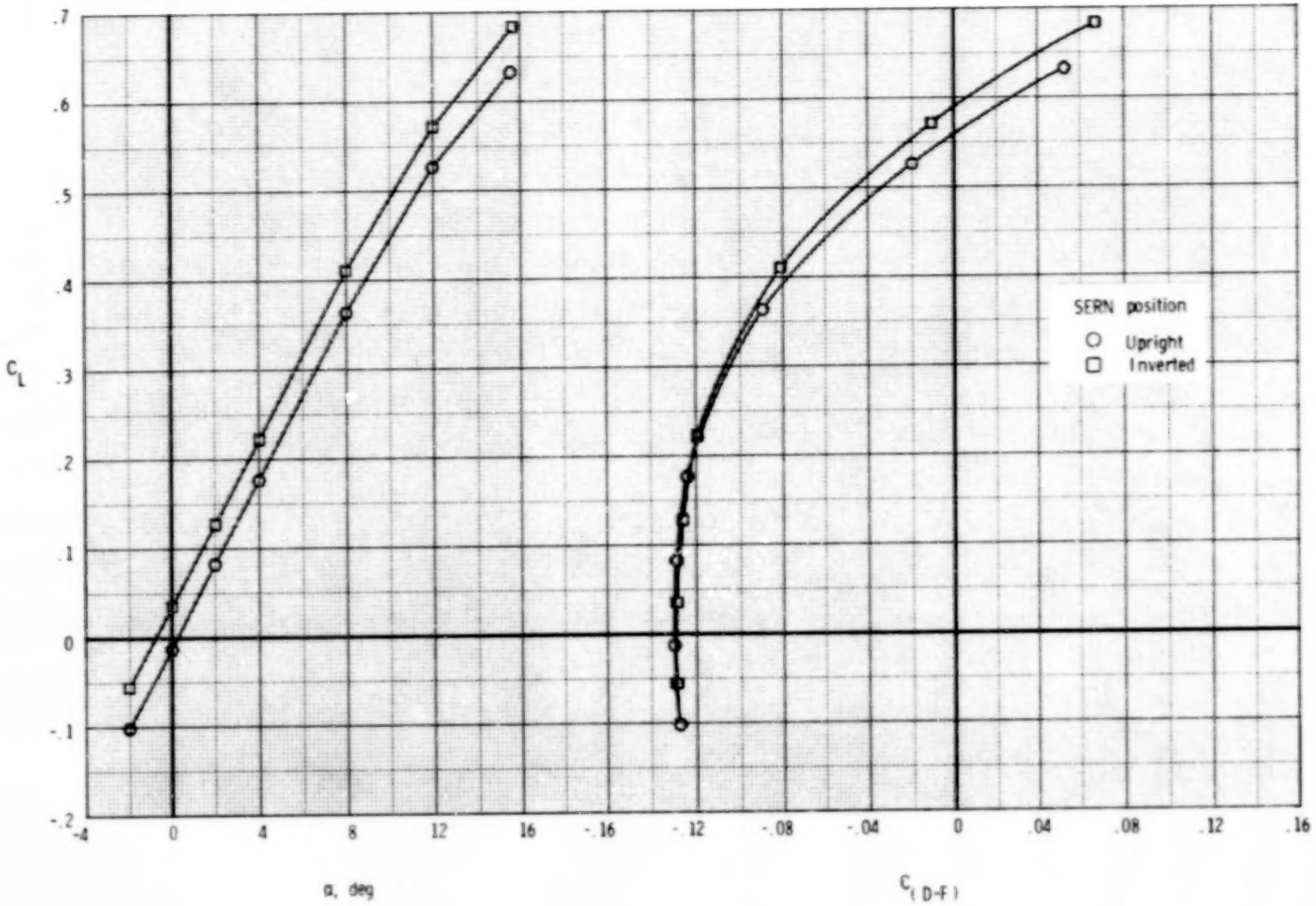
(d) $\delta_v = 20^o$.

Figure 62.- Concluded.



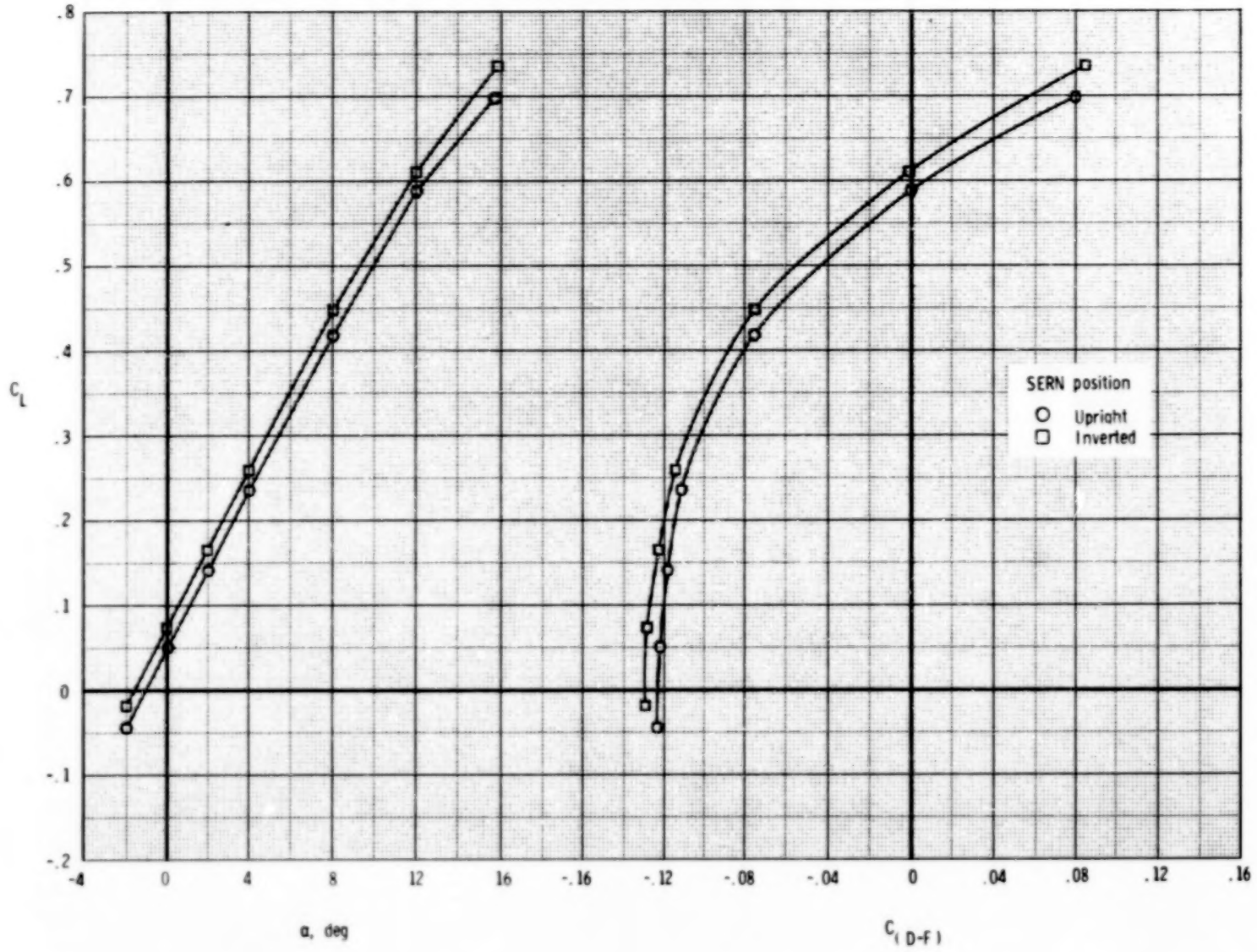
(a) $\delta_v = -5^o$.

Figure 63.- Effect of SERN position on total longitudinal aerodynamic characteristics. Forward-swept wing; A/B power; M = 0.60; NPR = 3.5.



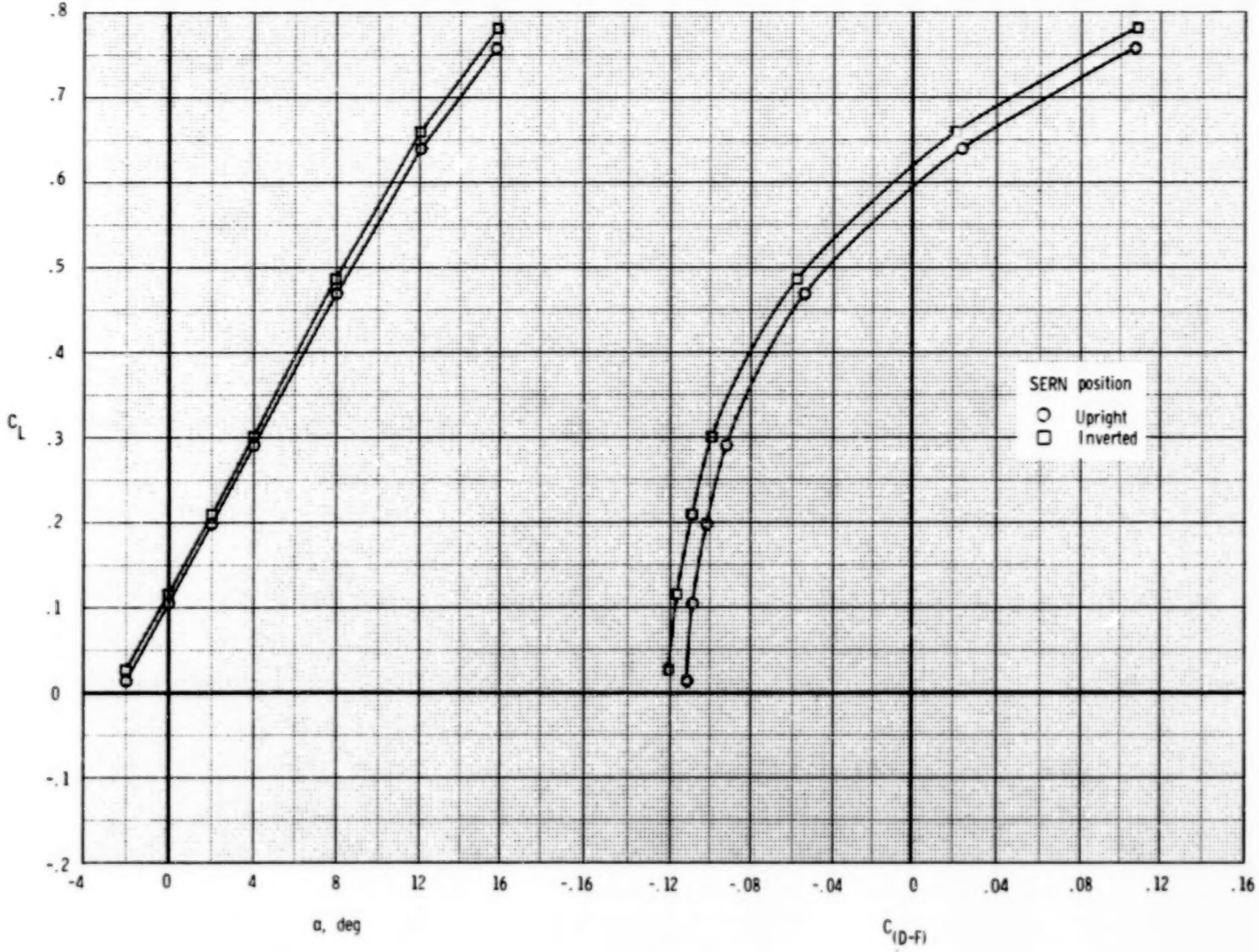
(b) $\delta_v = 0^\circ$.

Figure 63.- Continued.



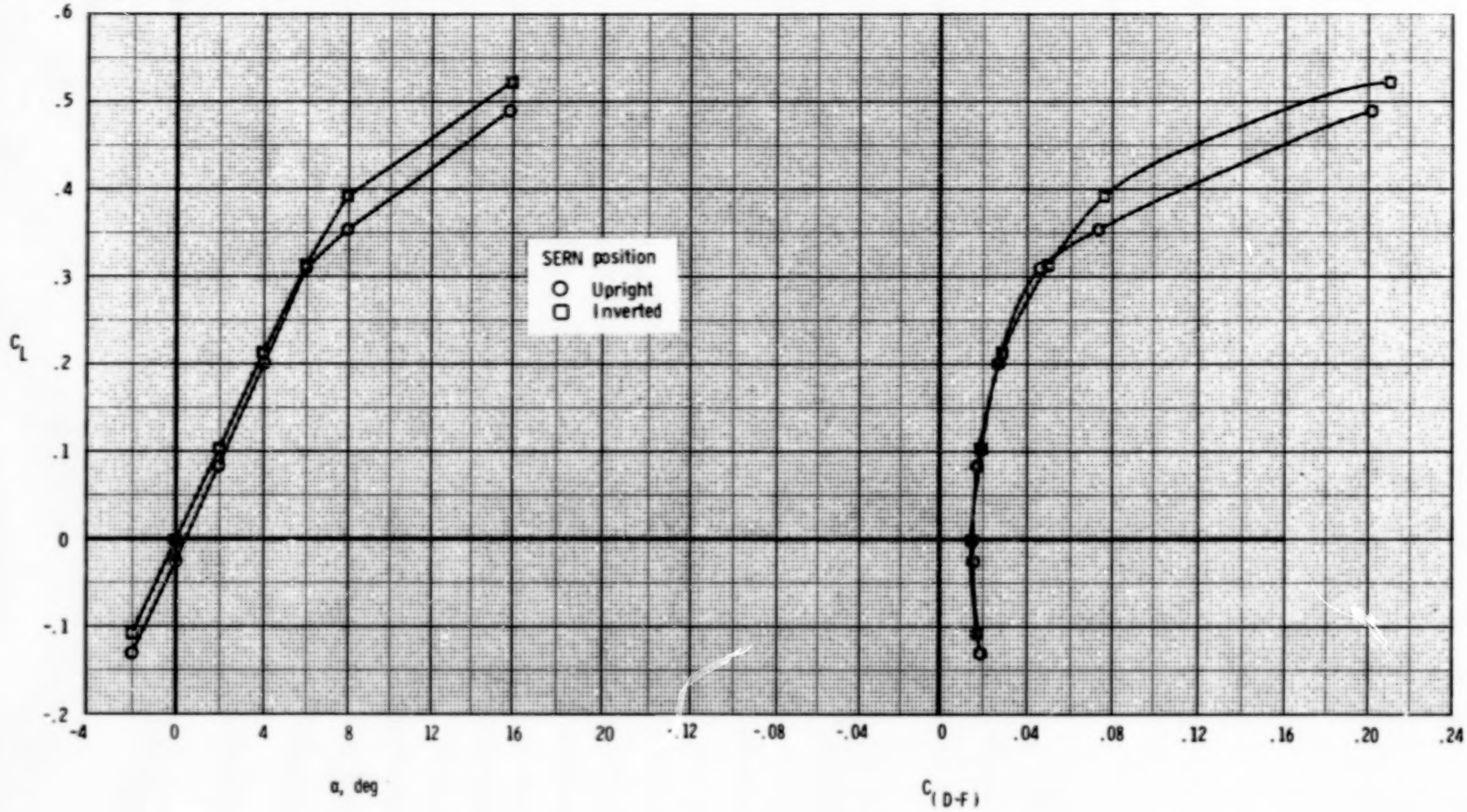
(c) $\delta_v = 10^o$.

Figure 63.- Continued.



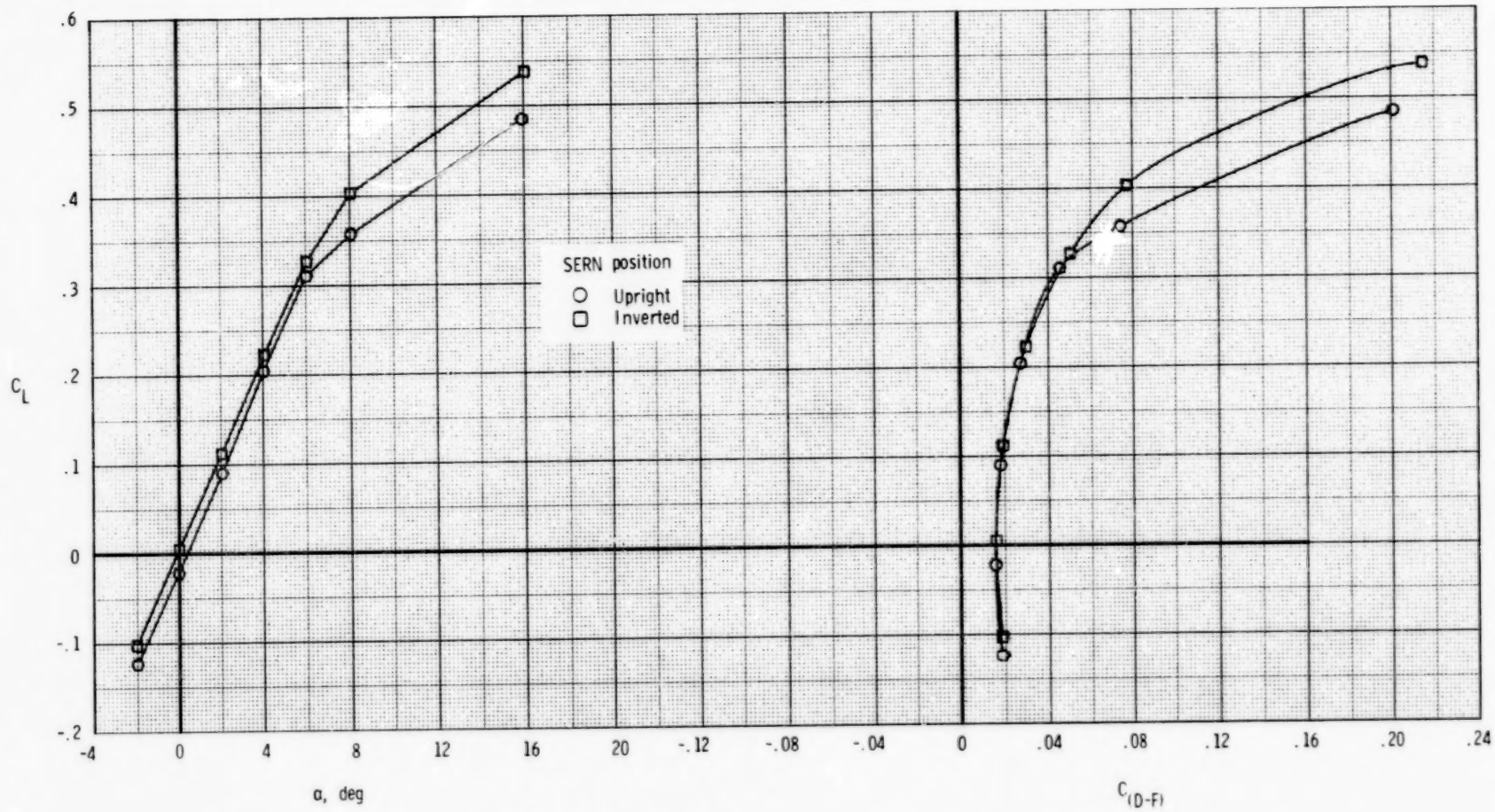
(d) $\delta_v = 20^\circ$.

Figure 63.- Concluded.



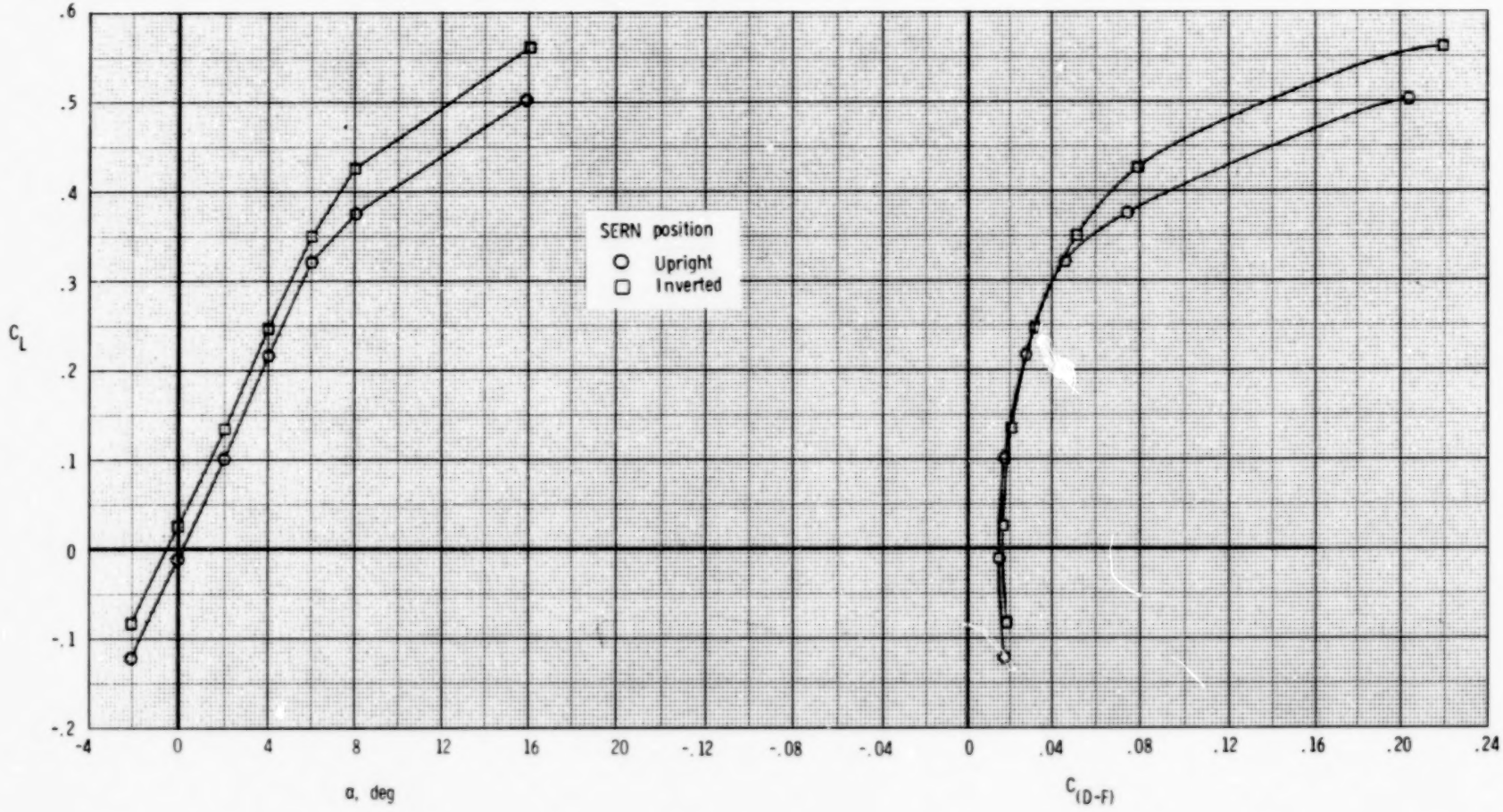
(a) $\delta_v = -5^o$.

Figure 64.- Effect of SERN position on total longitudinal aerodynamic characteristics. Forward-swept wing; A/B power; M = 0.90; NPR = 1.0.



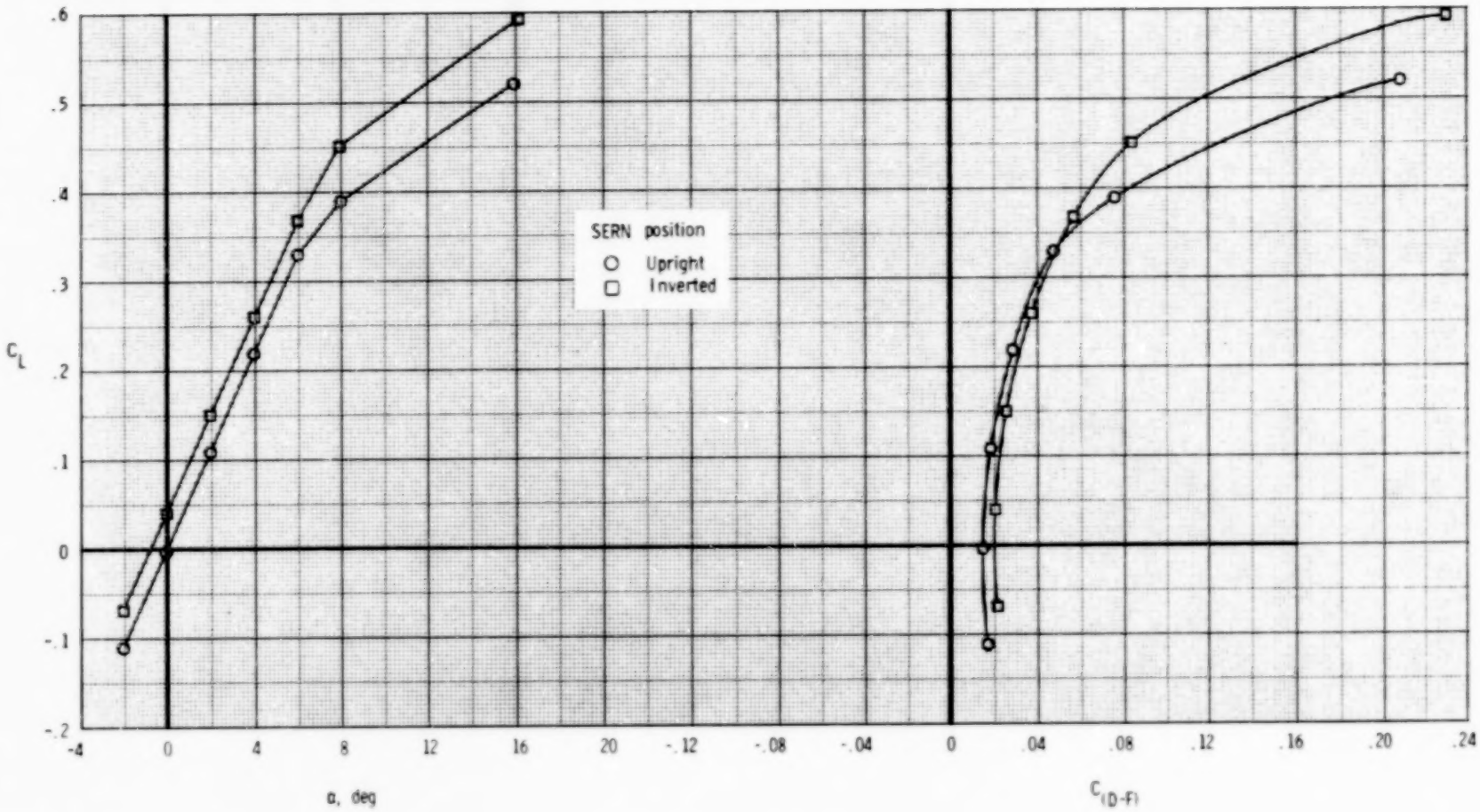
(b) $\delta_v = 0^o$.

Figure 64.- Continued.



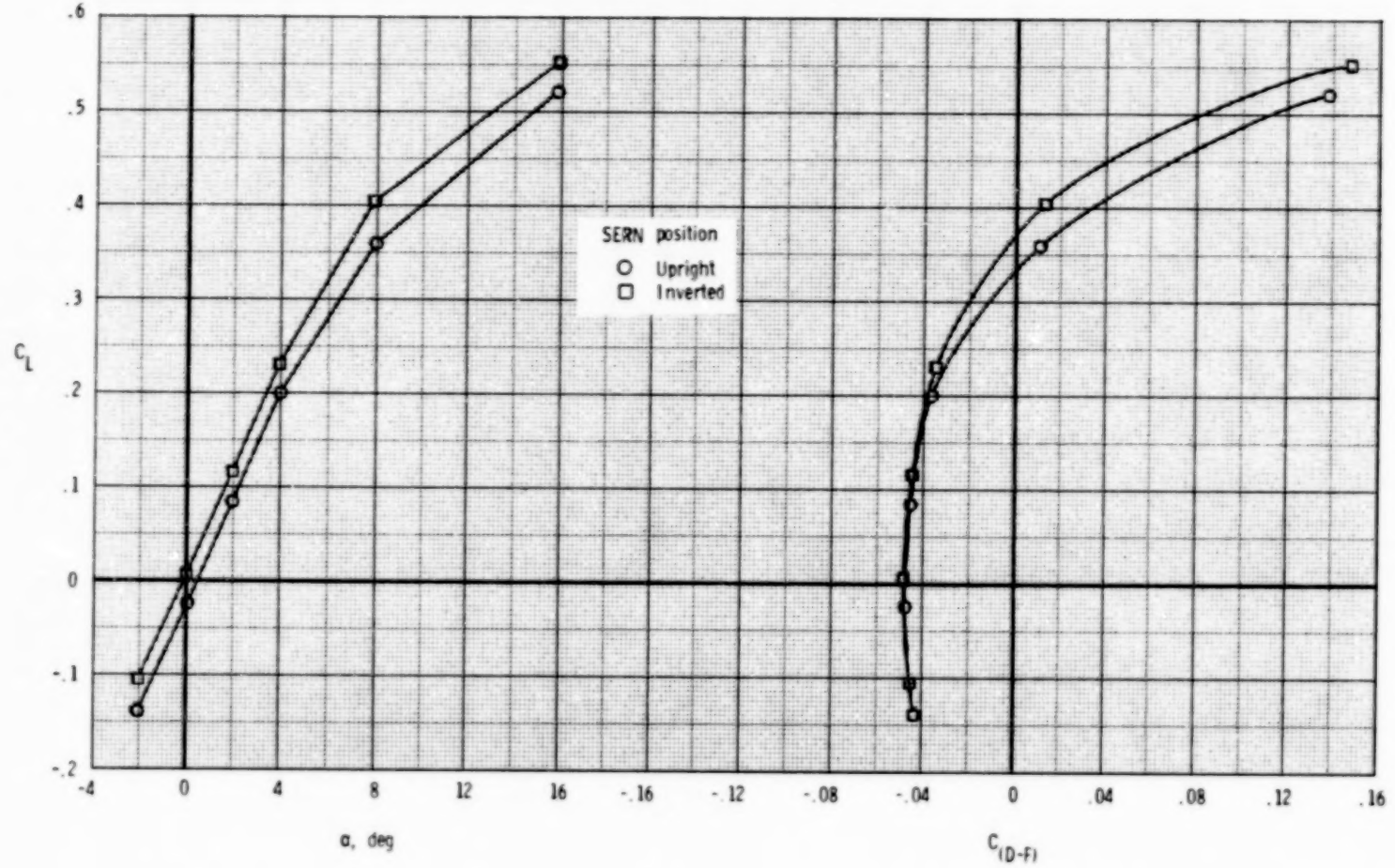
(c) $\delta_v = 10^o$.

Figure 64.- Continued.



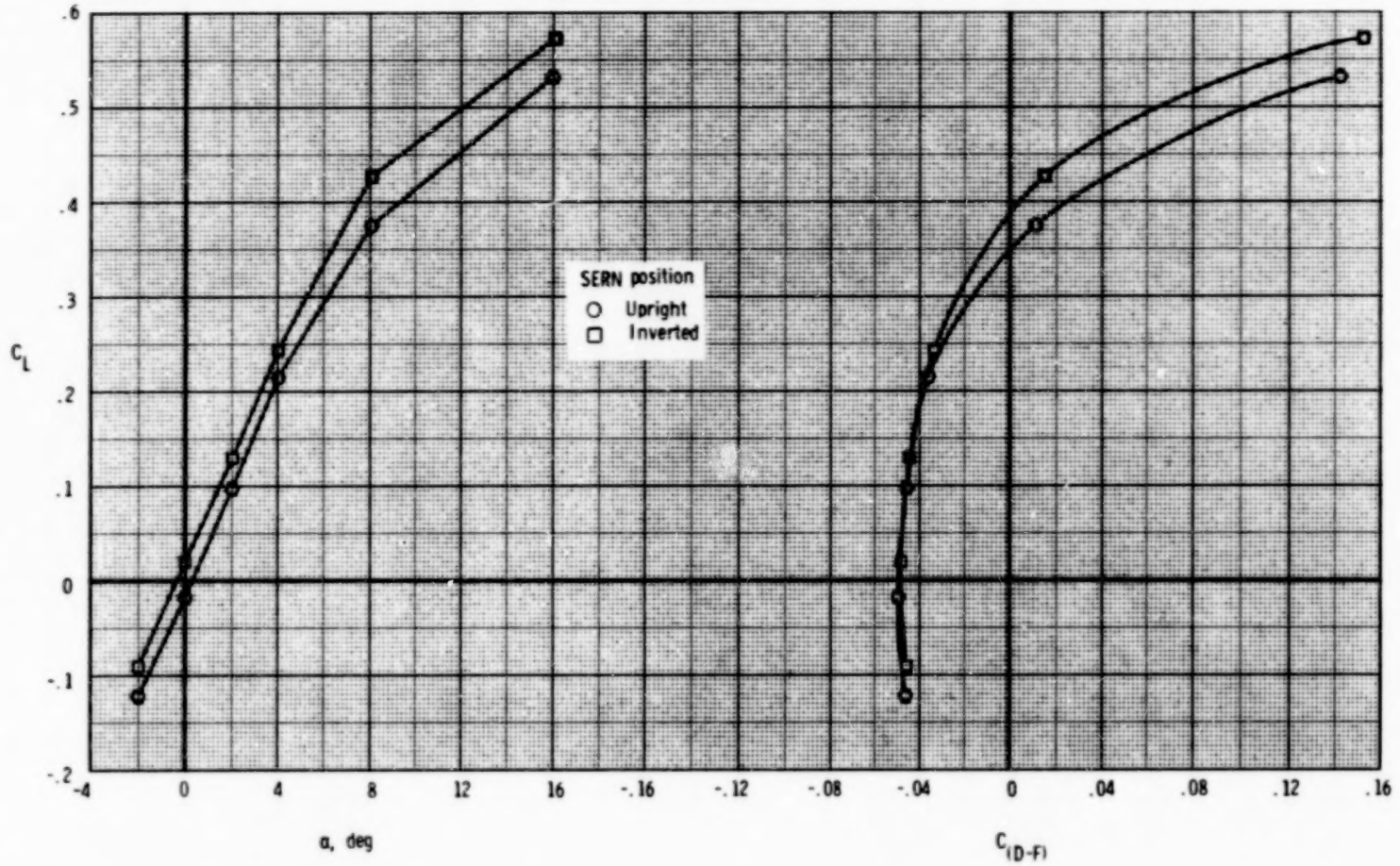
(d) $\delta_v = 20^o$.

Figure 64.- Concluded.



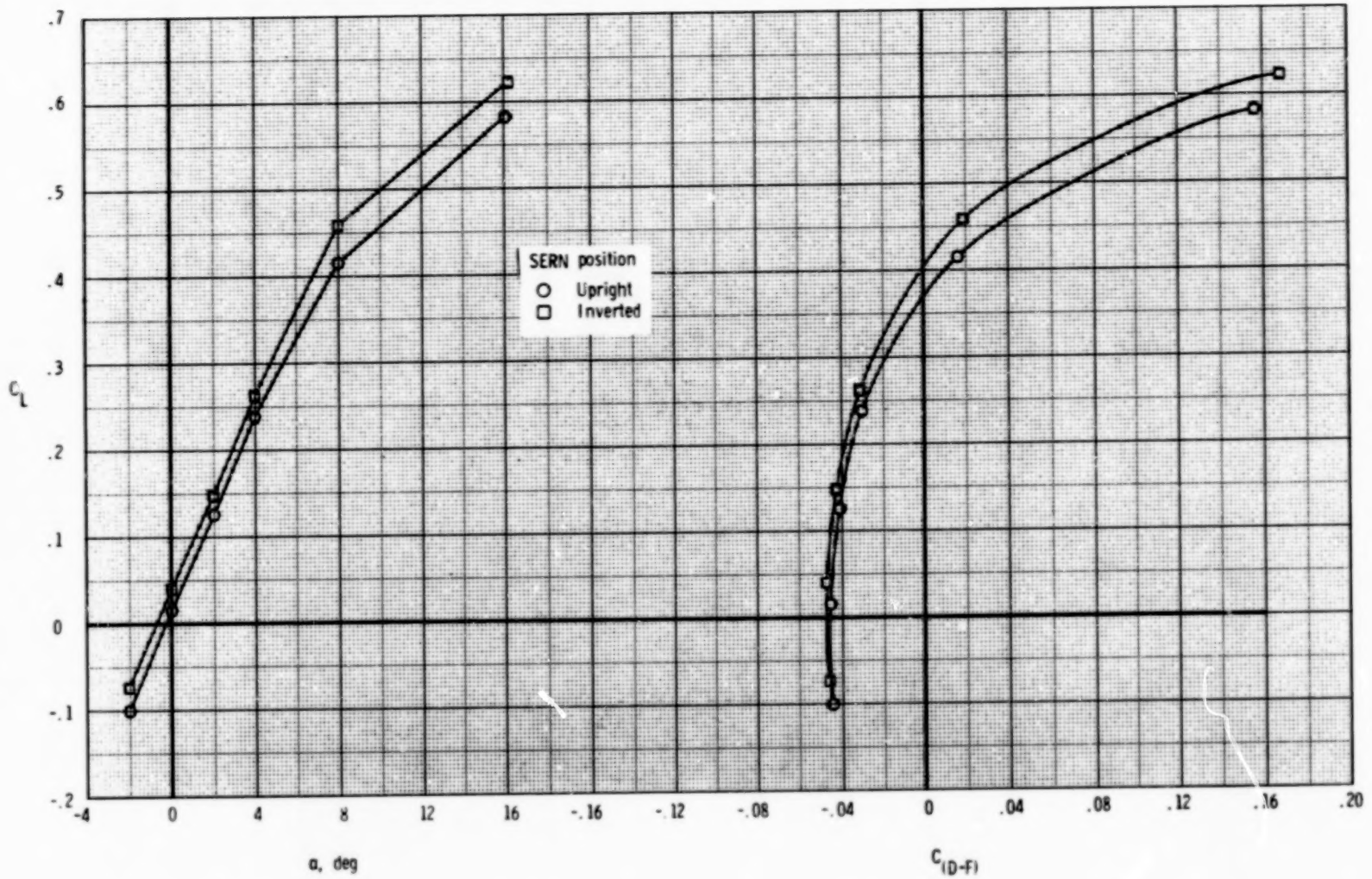
(a) $\delta_v = -5^o$.

Figure 65.- Effect of SERN position on total longitudinal aerodynamic characteristics. Forward-swept wing; A/B power; M = 0.90; NPR = 3.5.



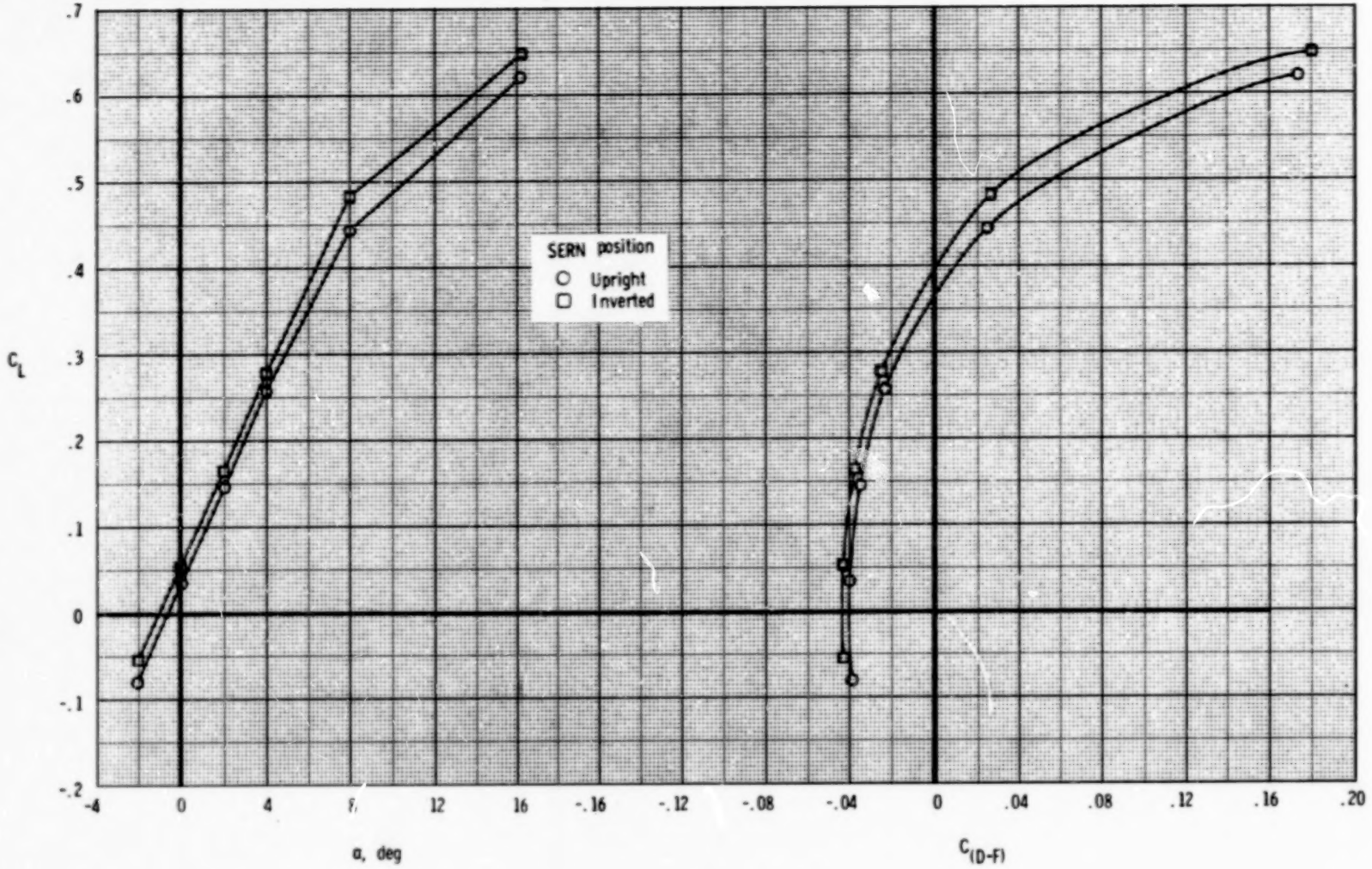
(b) $\delta_v = 0^o$.

Figure 65.- Continued.



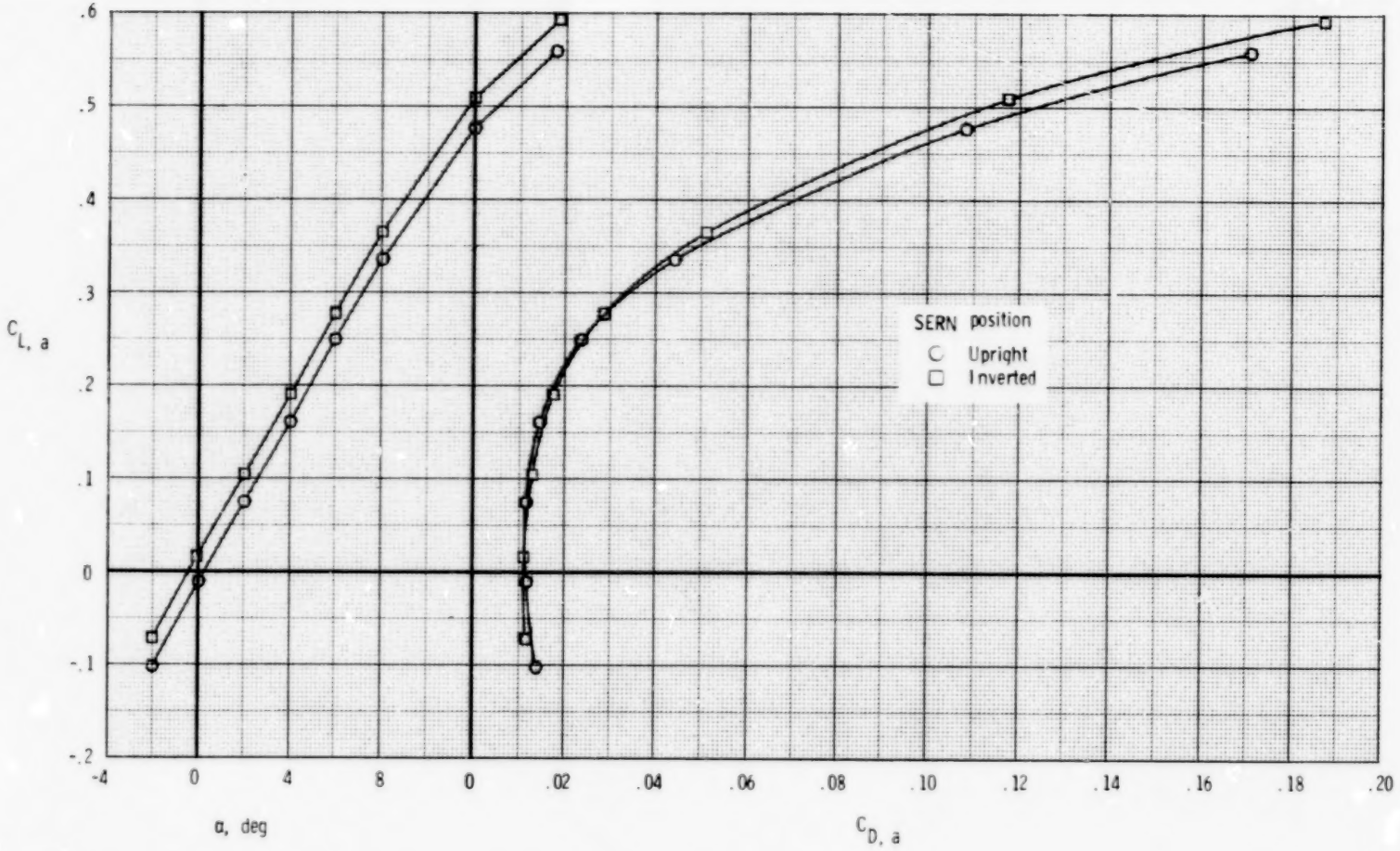
(c) $\delta_v = 10^o$.

Figure 65.- Continued.



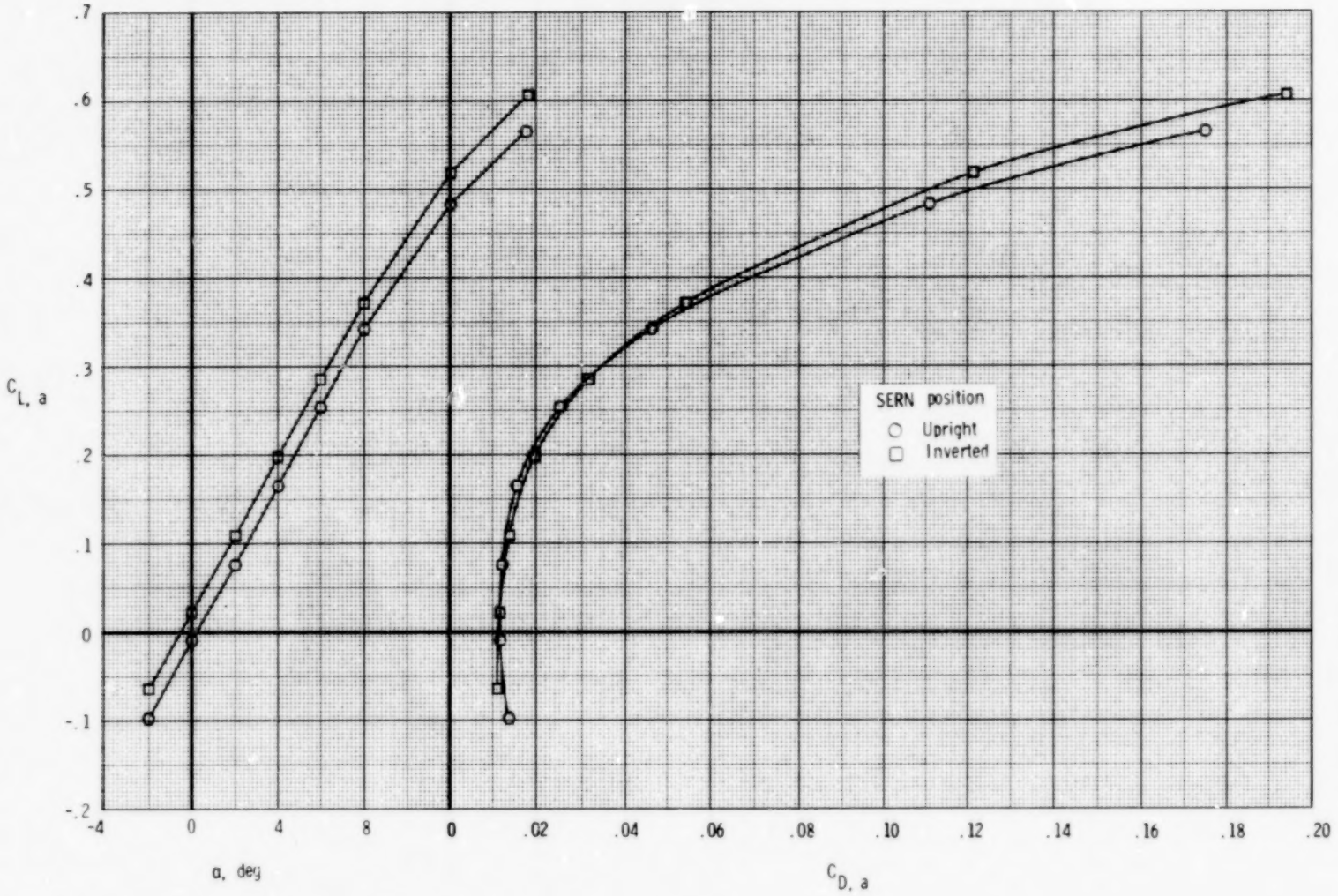
(d) $\delta_v = 20^o$.

Figure 65.- Concluded.



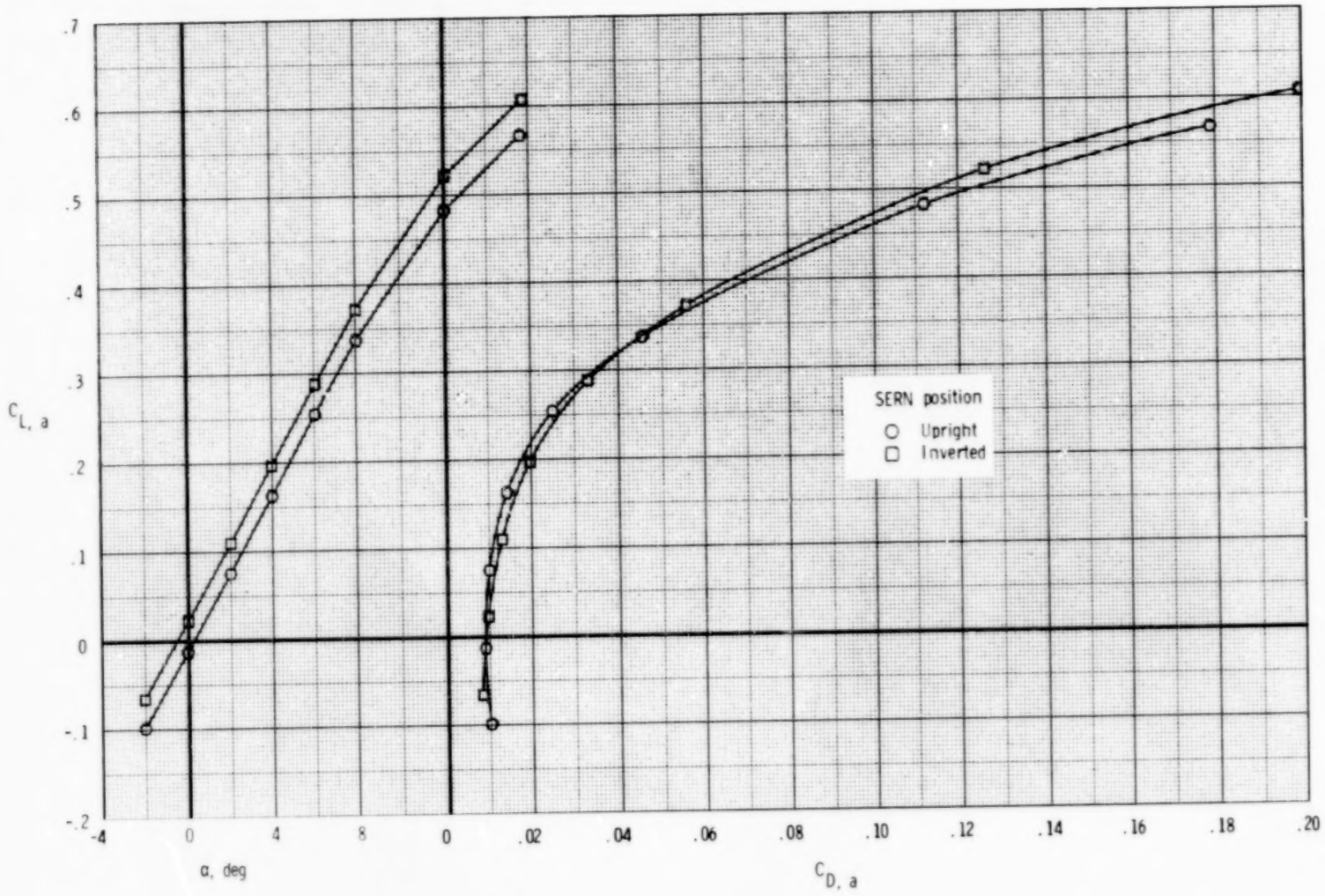
(a) $\delta_v = -5^o$.

Figure 66.- Effect of SERN position on thrust-removed aerodynamic characteristics. Forward-swept wing; dry power; M = 0.60; NPR = 1.0.



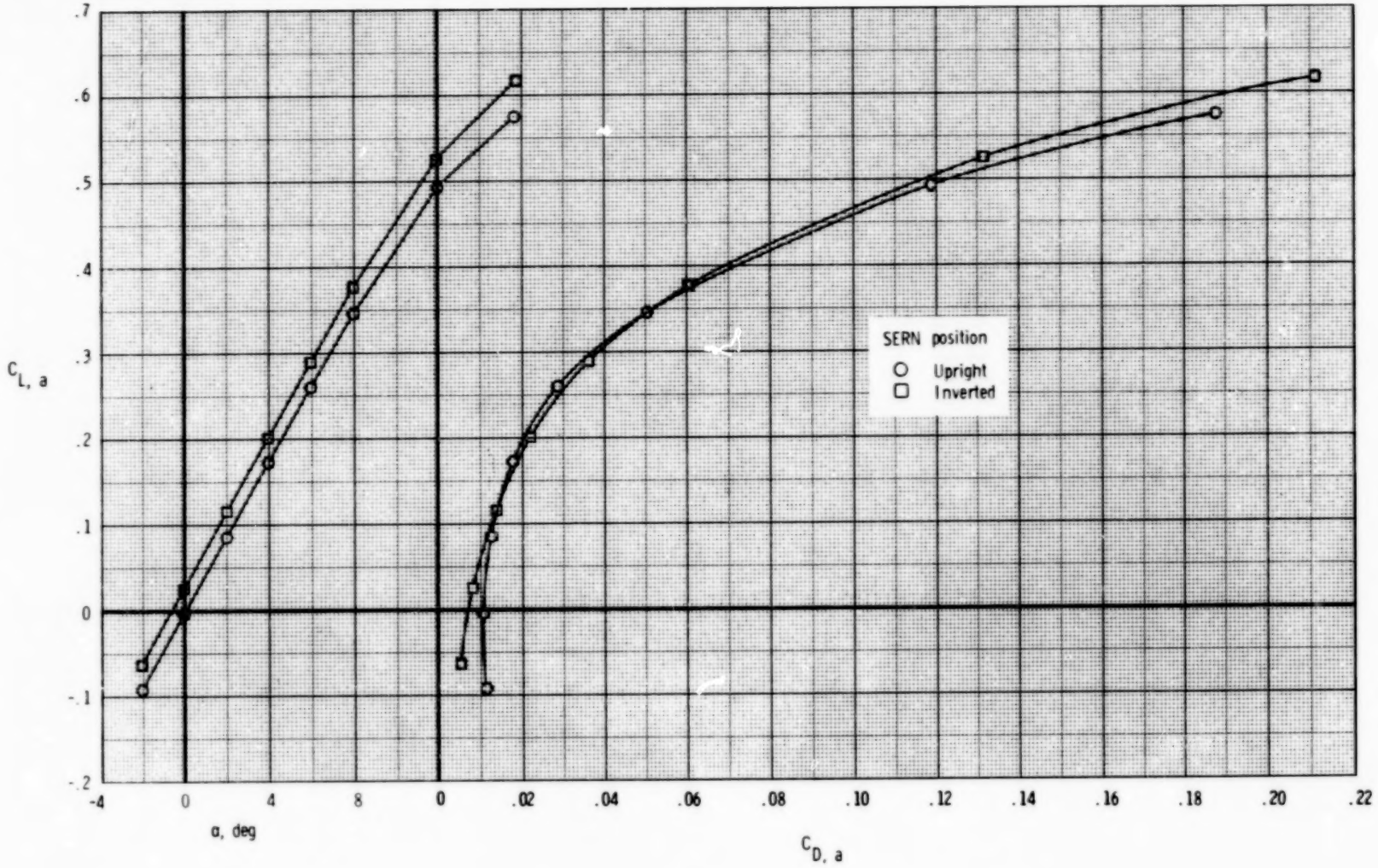
(b) $\delta_v = 0^o$.

Figure 66.- Continued.



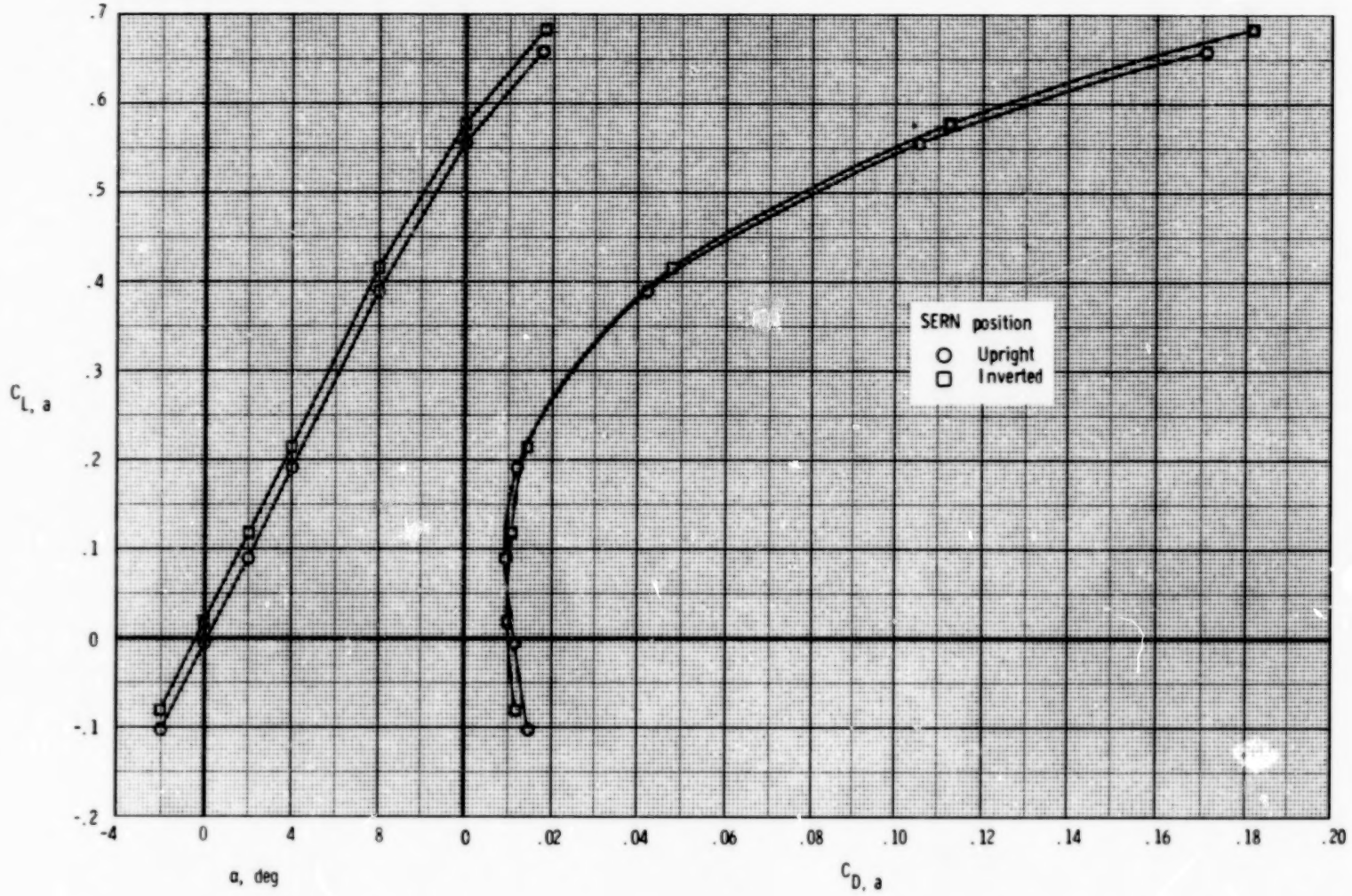
(c) $\delta_v = 10^o$.

Figure 66.- Continued.



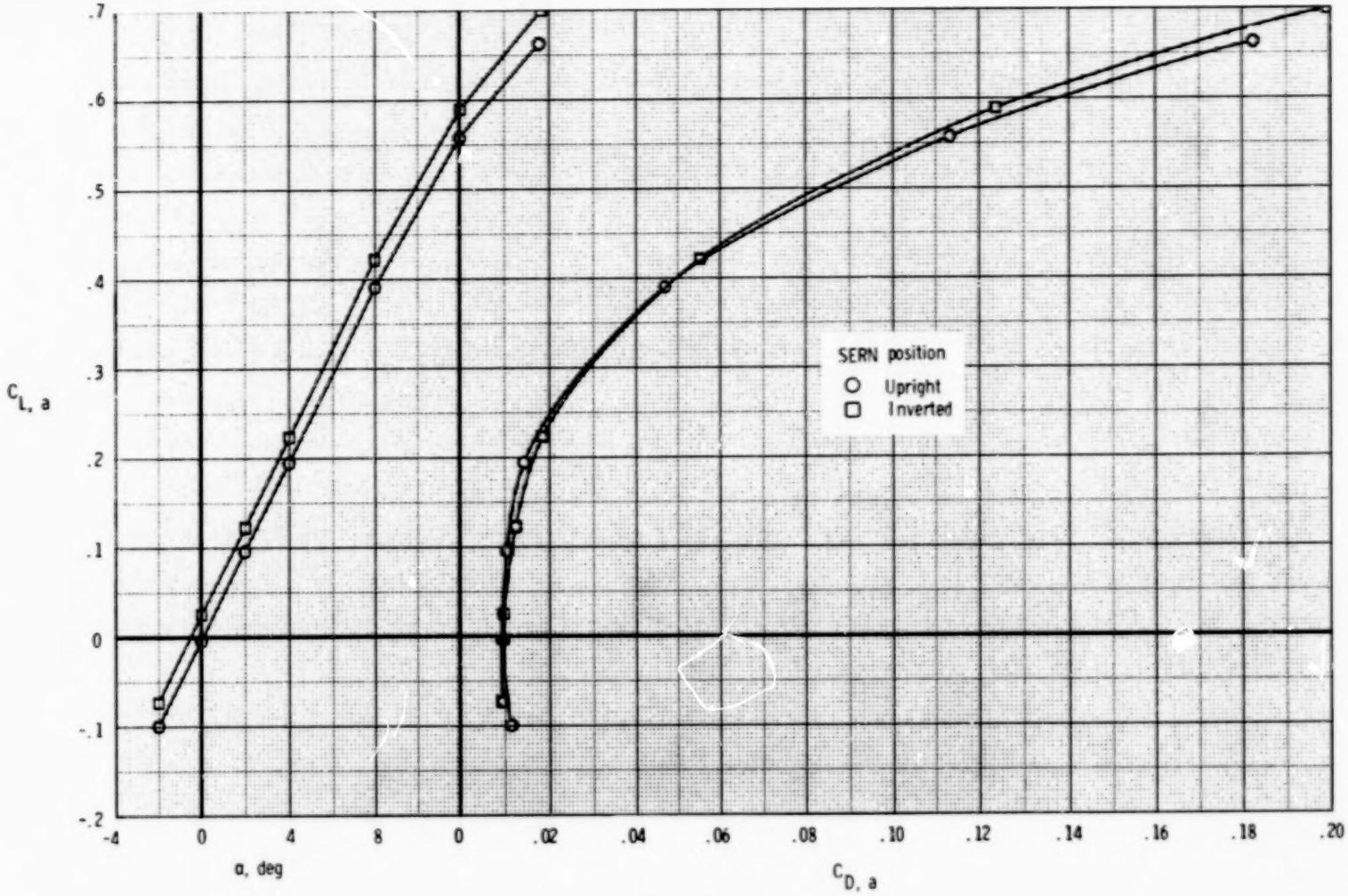
(d) $\delta_v = 20^o$.

Figure 66.- Concluded.



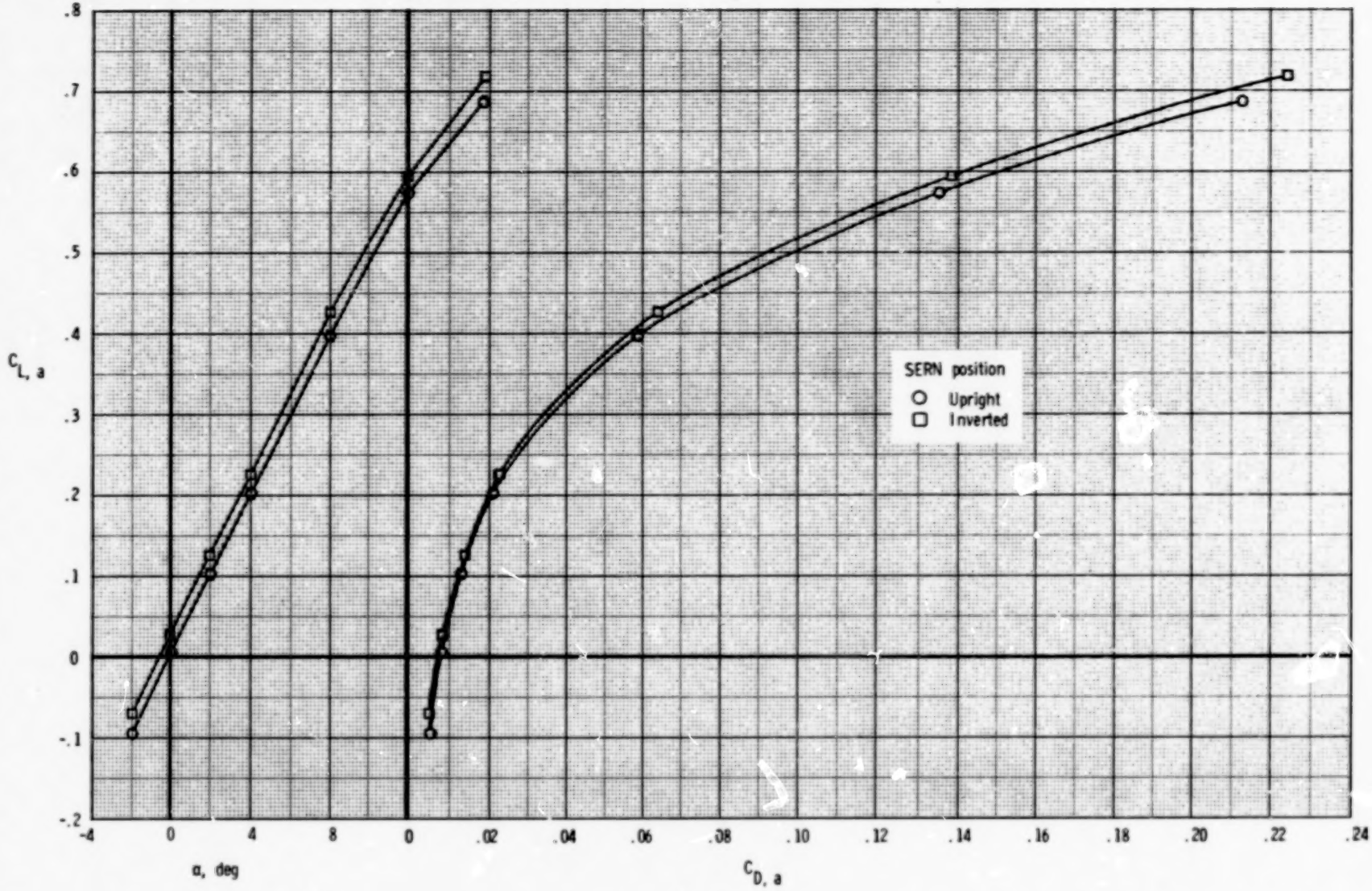
(a) $\delta_v = -5^o$.

Figure 67.- Effect of SERN position on thrust-removed aerodynamic characteristics. Forward-swept wing; dry power; M = 0.60; NPR = 3.5.



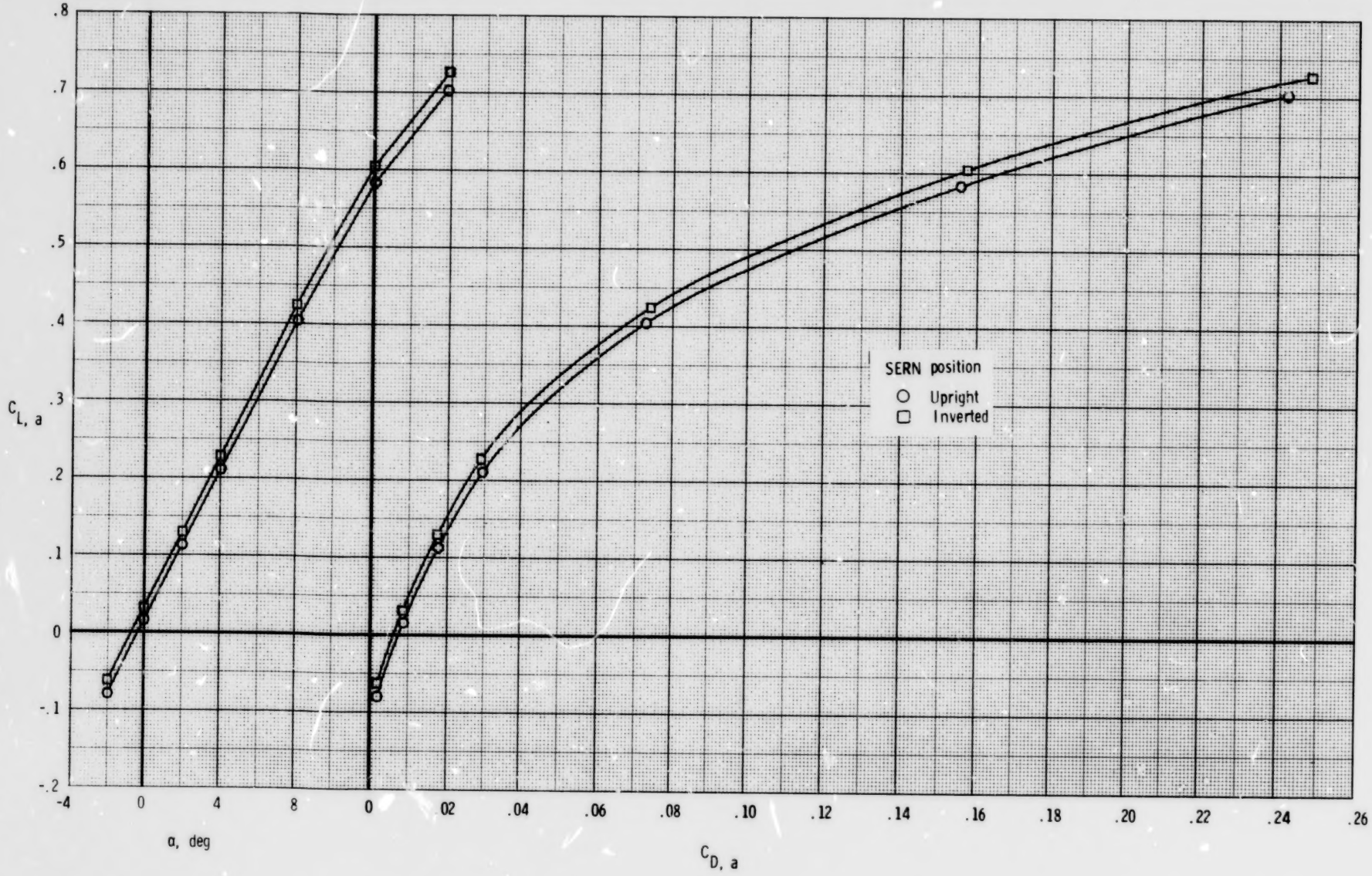
(b) $\delta_v = 0^o$.

Figure 67.- Continued.



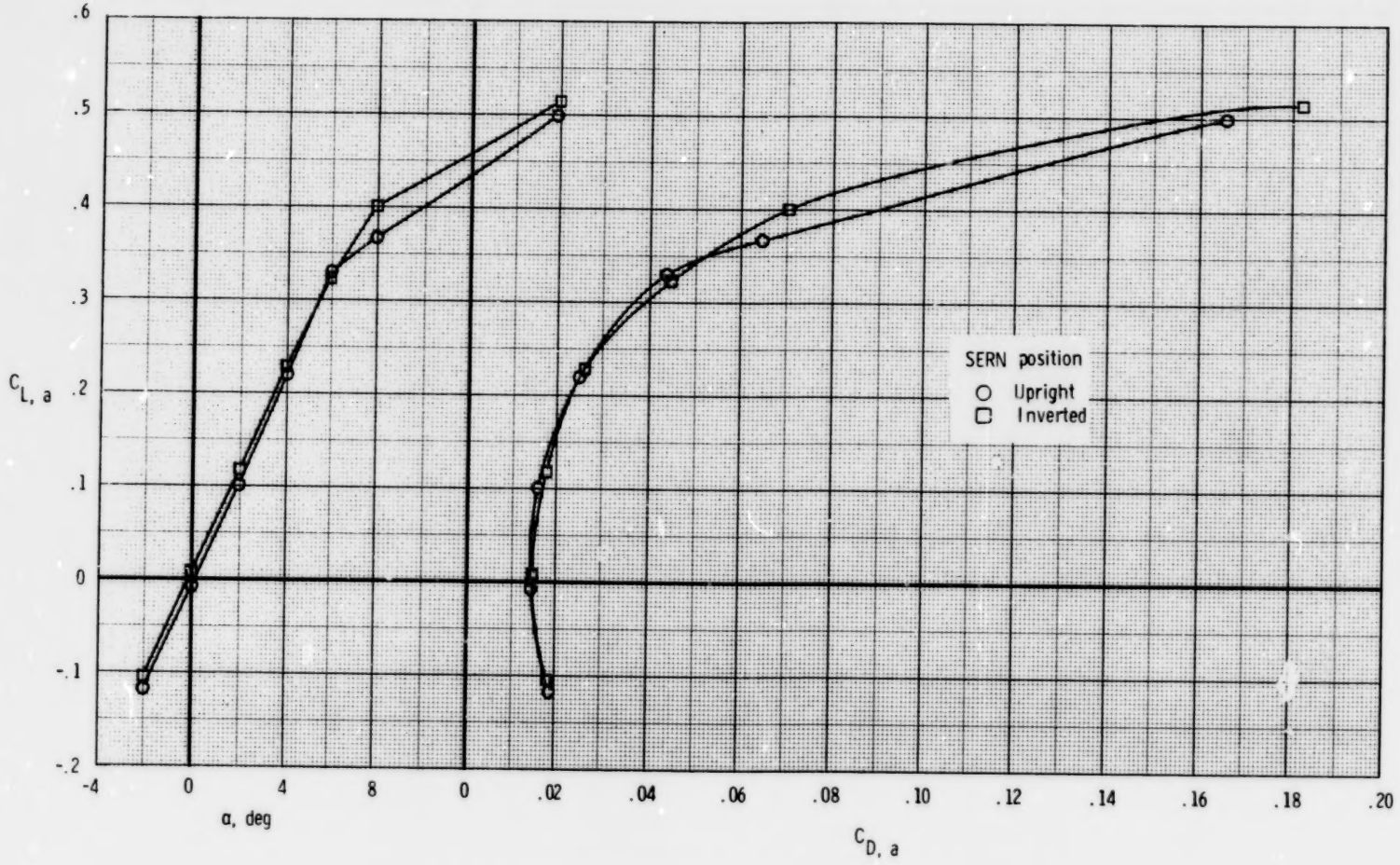
(c) $\delta_v = 10°$.

Figure 67.- Continued.



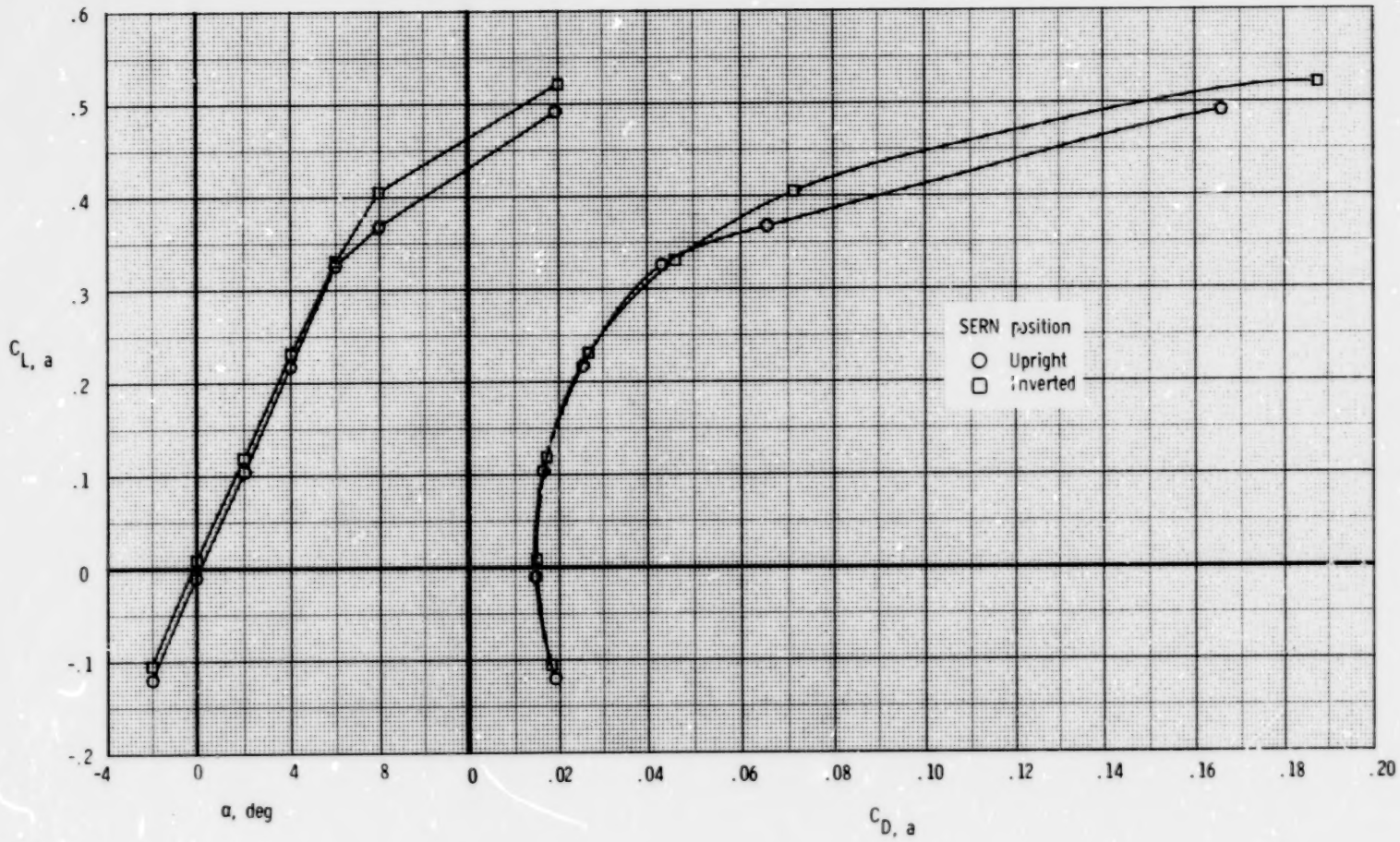
(d) $\delta_v = 20^\circ$.

Figure 67.- Concluded.



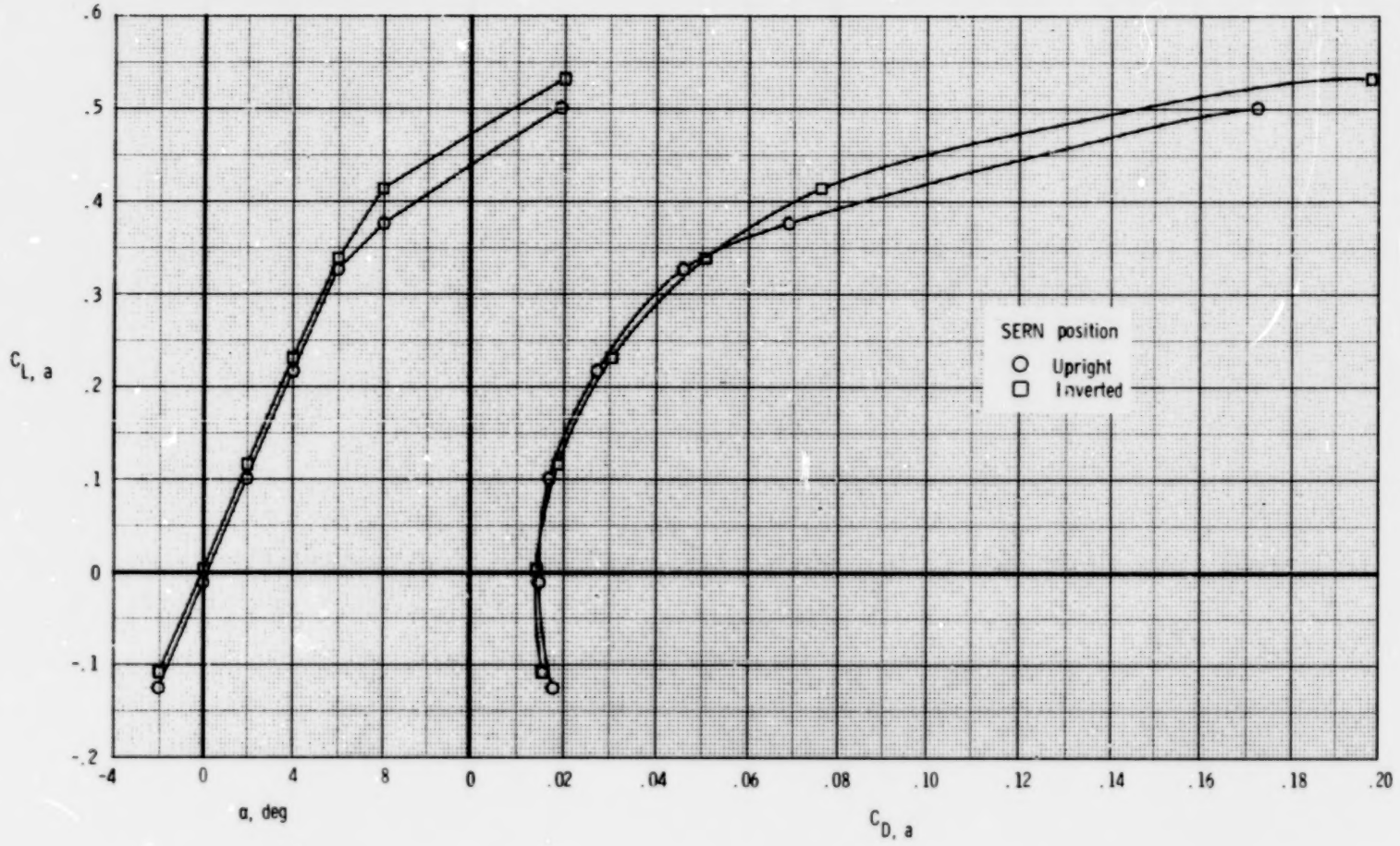
(a) $\delta_v = -5^o$.

Figure 68.- Effect of SERN position on thrust-removed aerodynamic characteristics. Forward-swept wing; dry power; M = 0.90; NPR = 1.0.



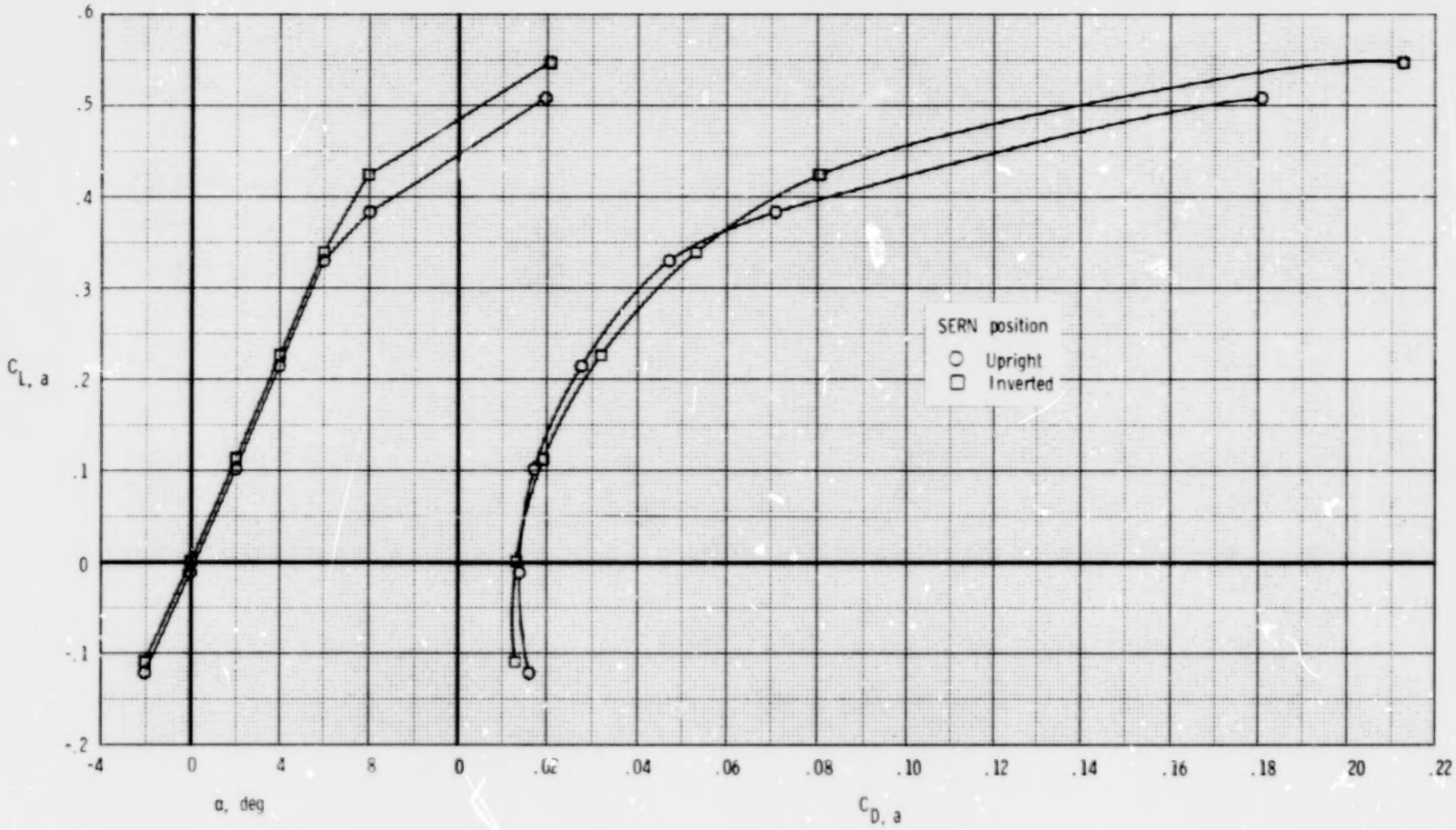
(b) $\delta_v = 0^o$.

Figure 68.- Continued.



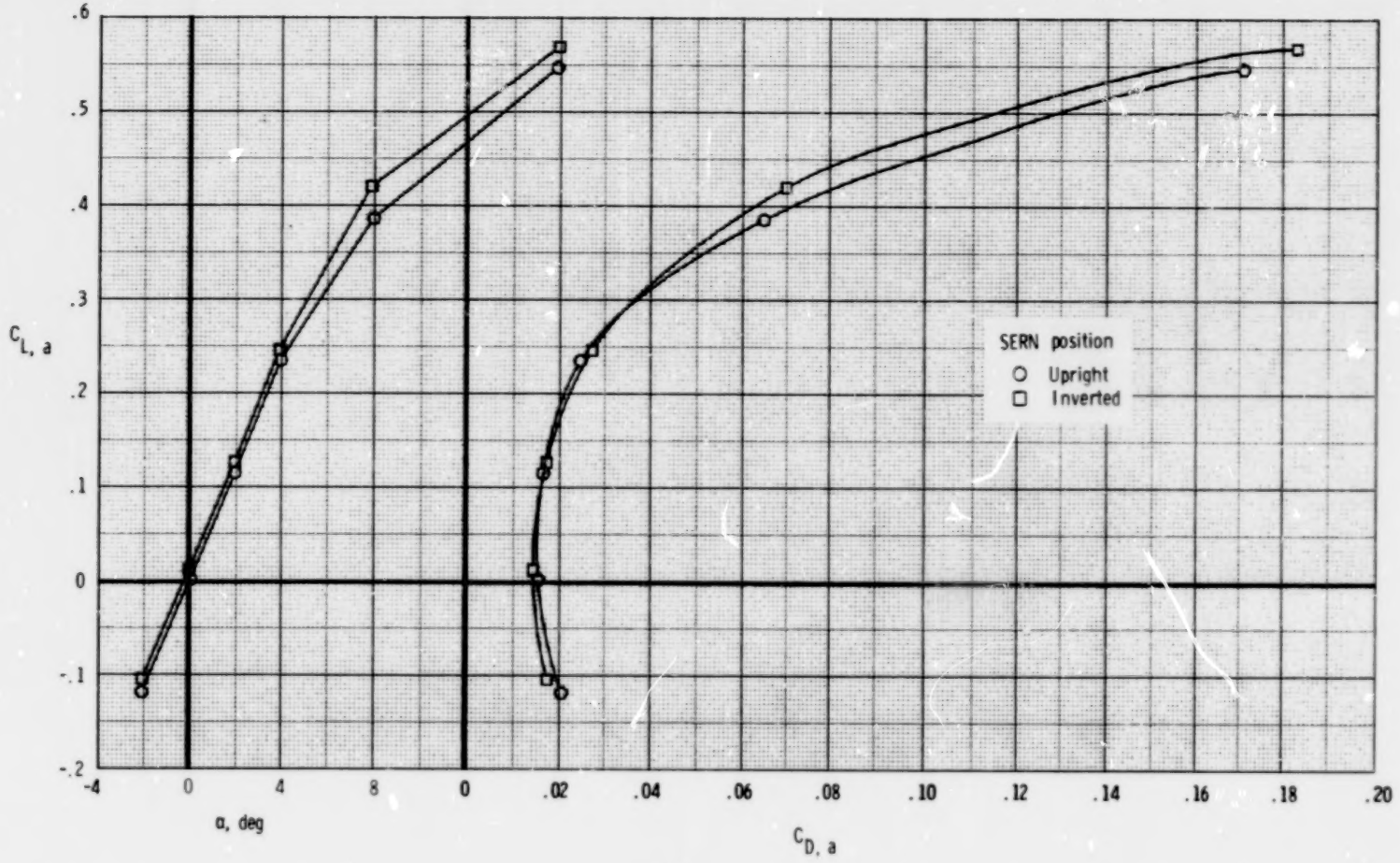
(c) $\delta_v = 10^o$.

Figure 68.- Continued.



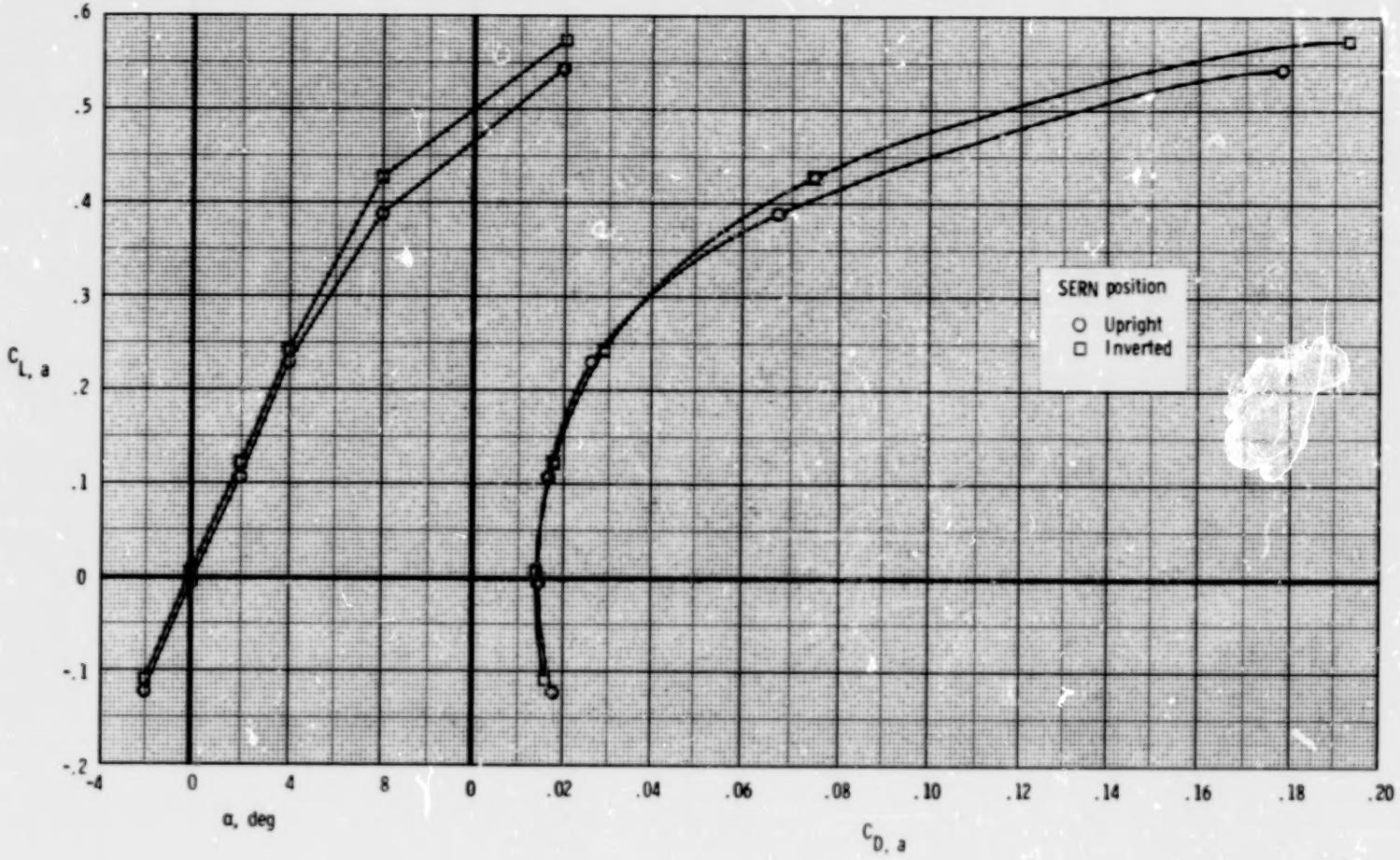
(d) $\delta_v = 20^o$.

Figure 68.- Concluded.



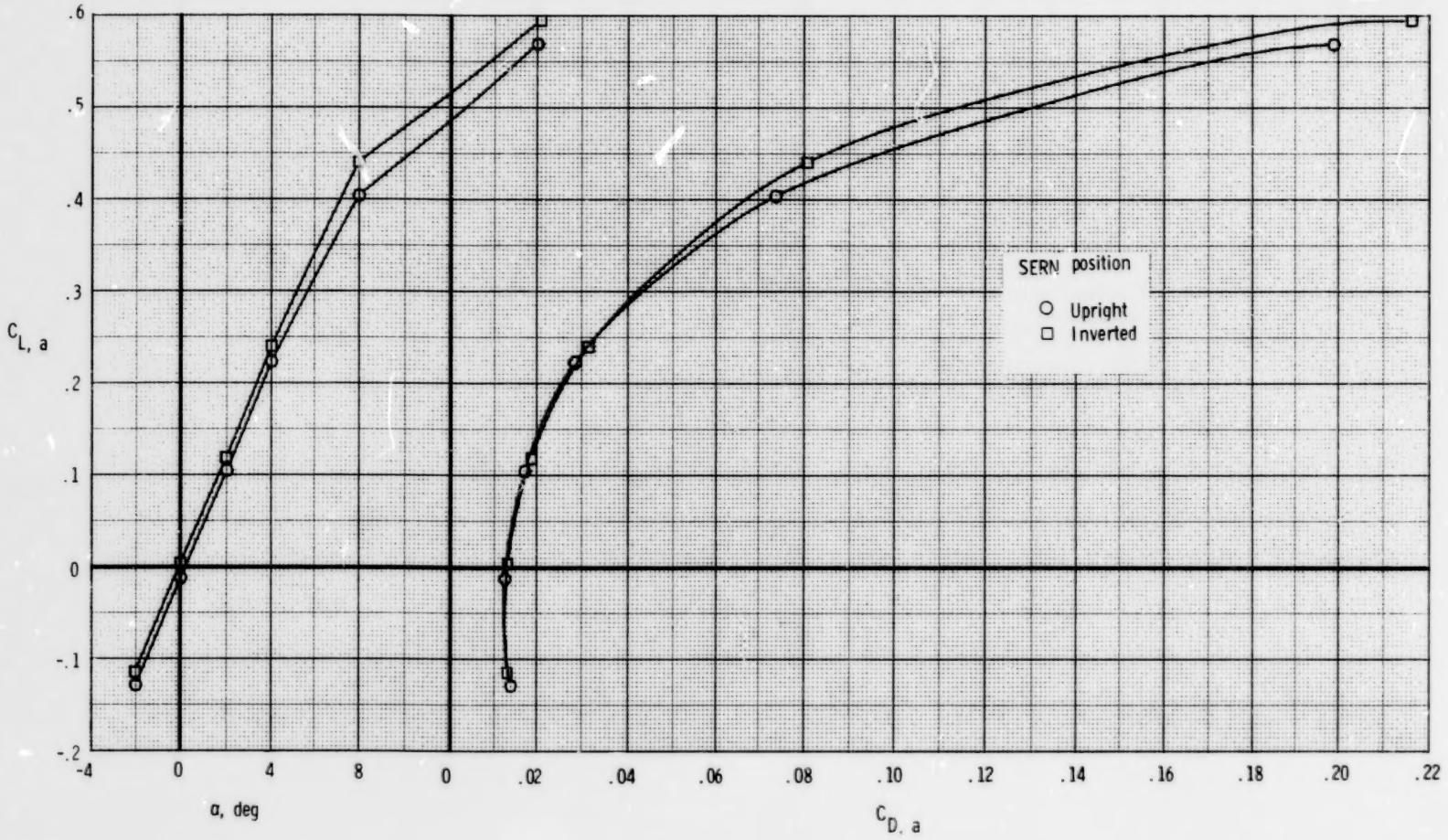
(a) $\delta_v = -5°$.

Figure 69.- Effect of SERN position on thrust-removed aerodynamic characteristics. Forward-swept wing; dry power; M = 0.90; NPR = 3.5.



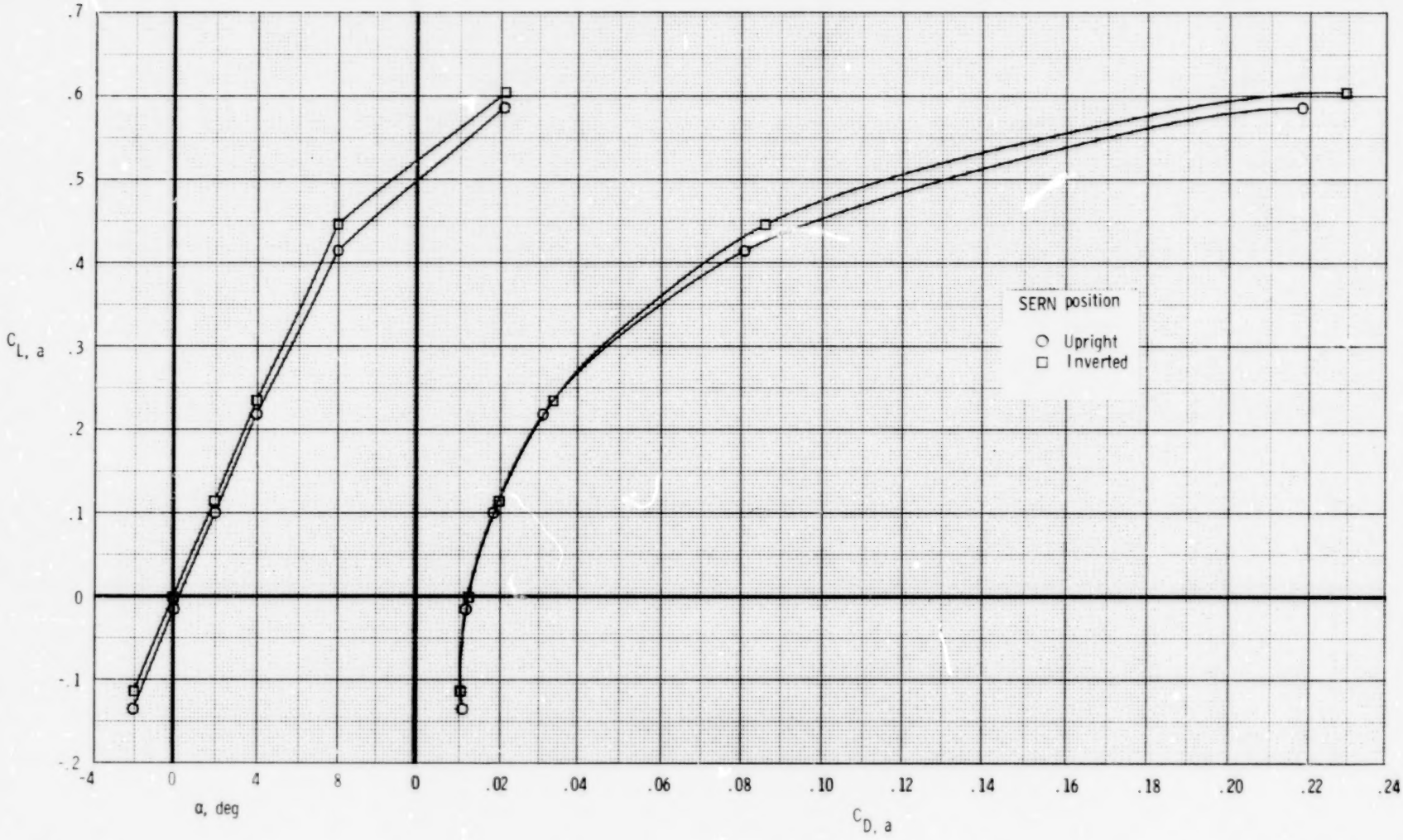
(b) $\delta_v = 0^o$.

Figure 69.- Continued.



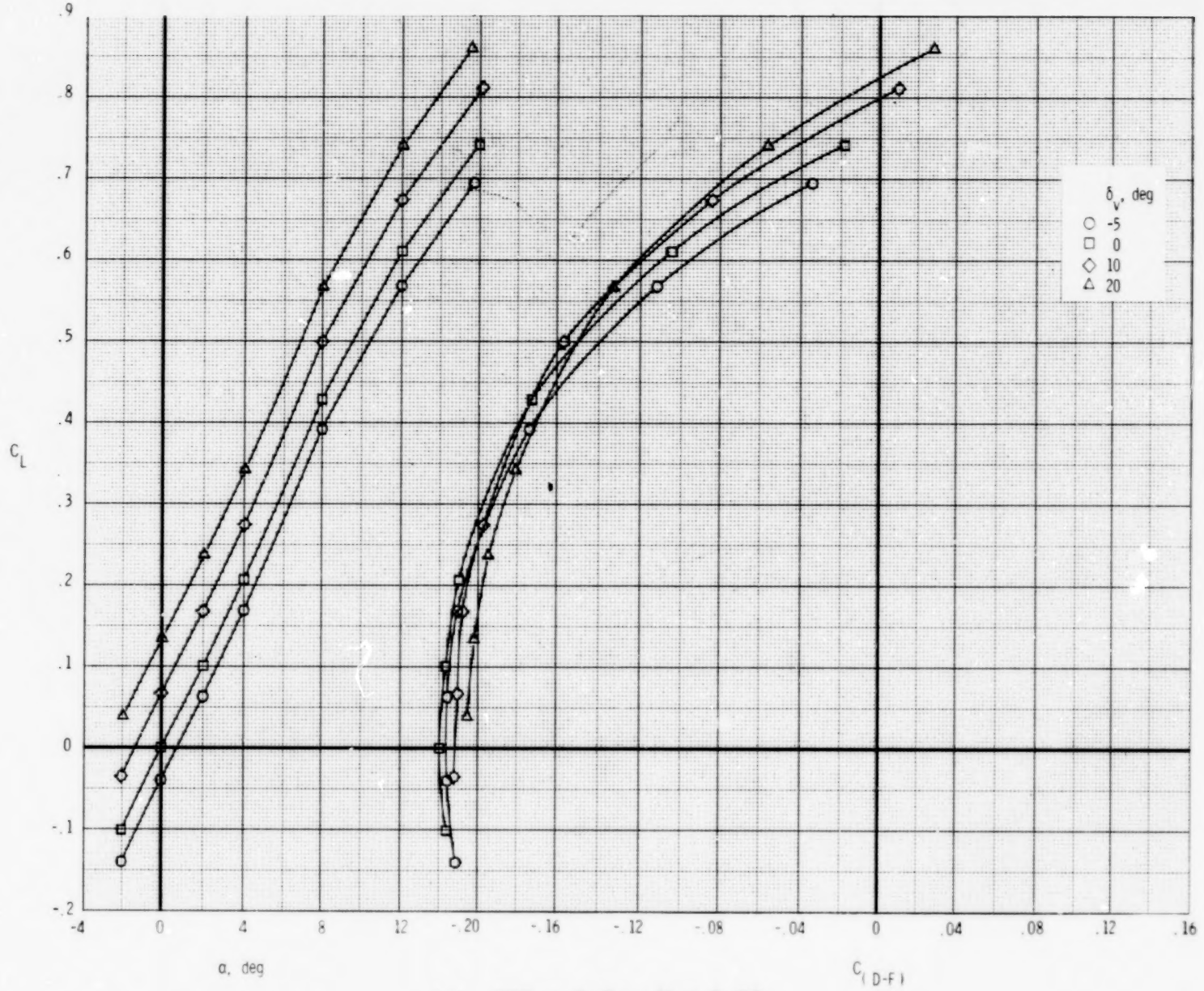
(c) $\delta_v = 10^o$.

Figure 69.- Continued.



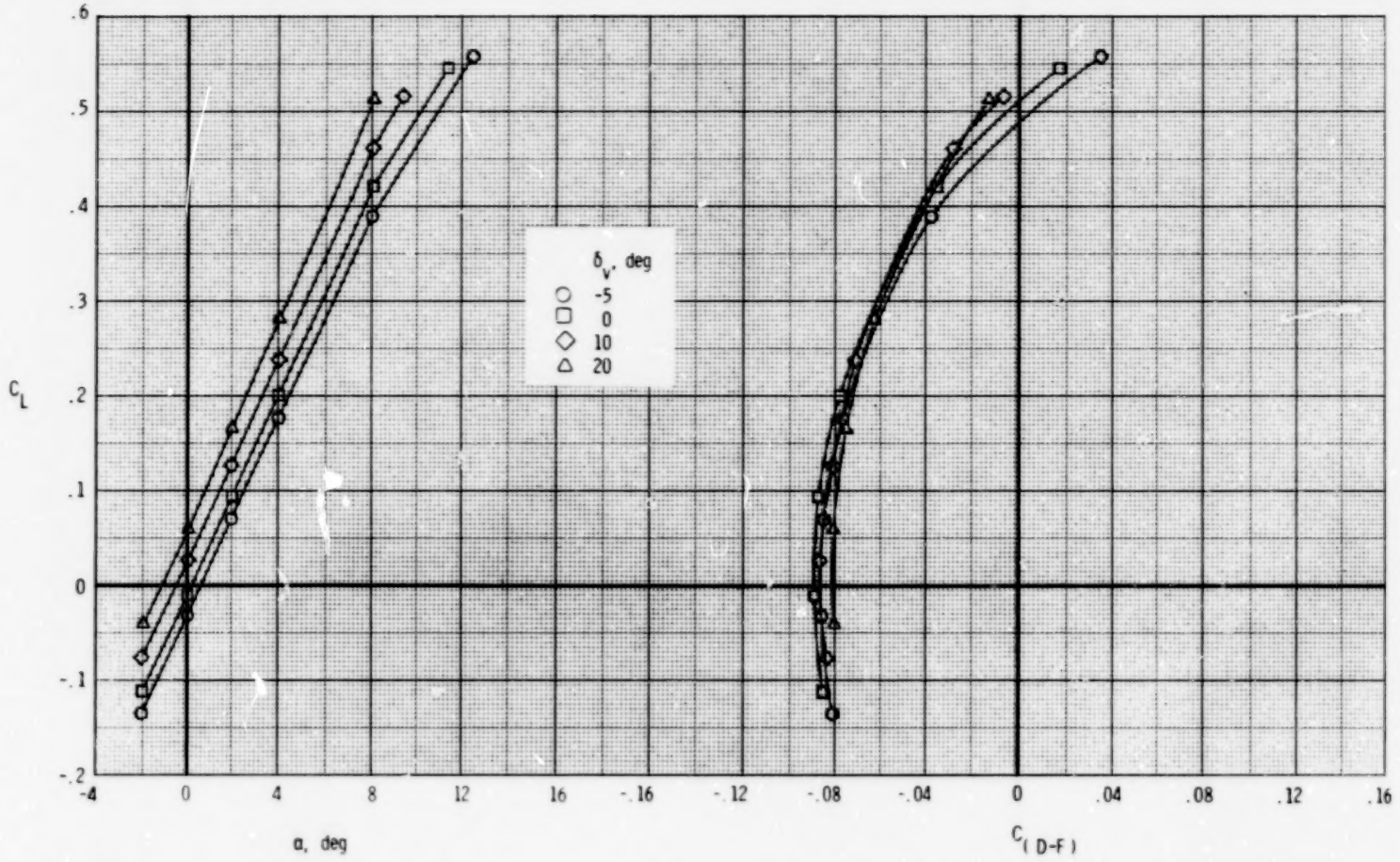
(d) $\delta_v = 20^o$.

Figure 69.- Concluded.



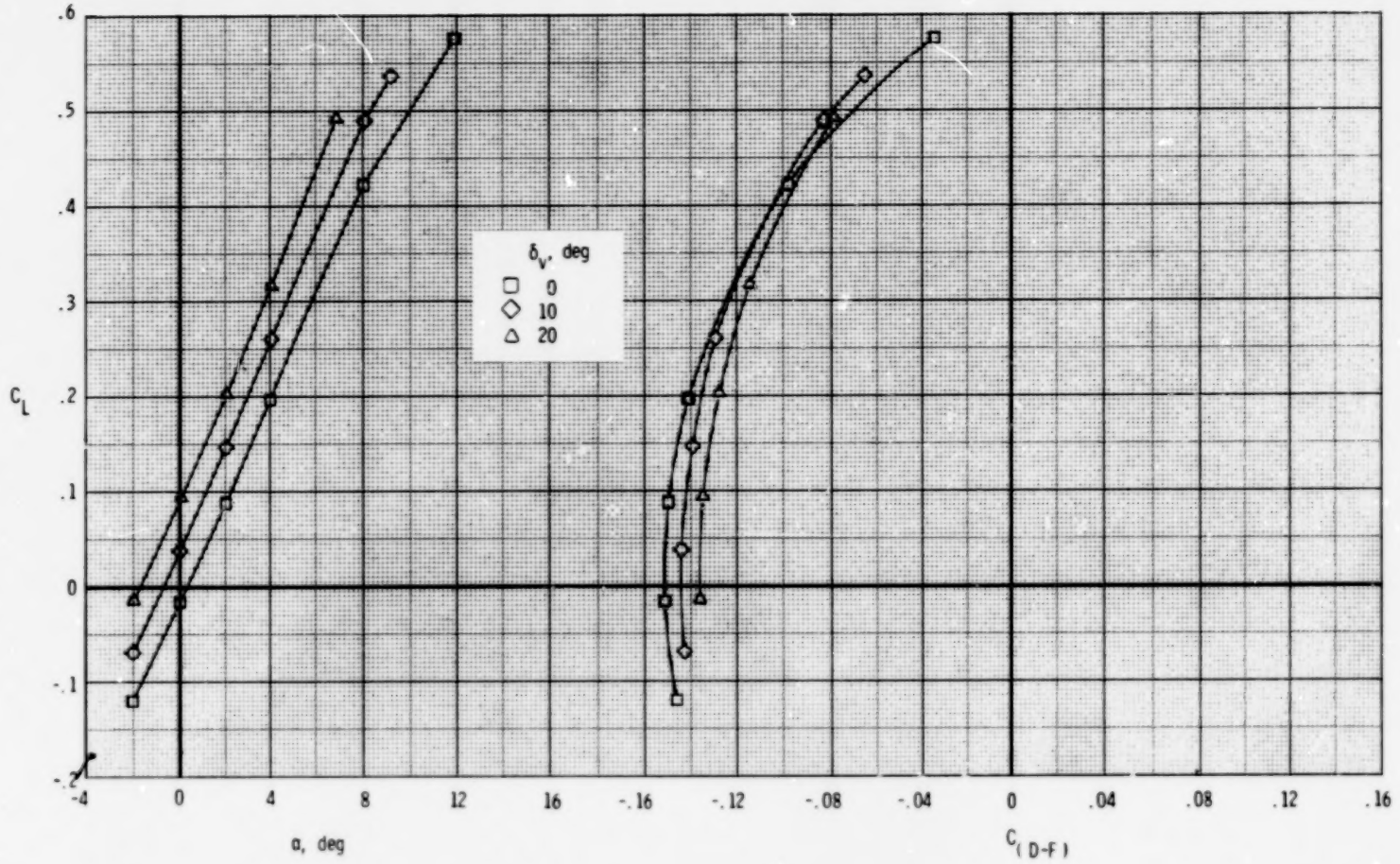
(a) NPR = 3.5; M = 0.60.

Figure 70.- Effect of vector angle on total longitudinal aerodynamic characteristics. Aft-swept wing; upright SERN, A/B power.



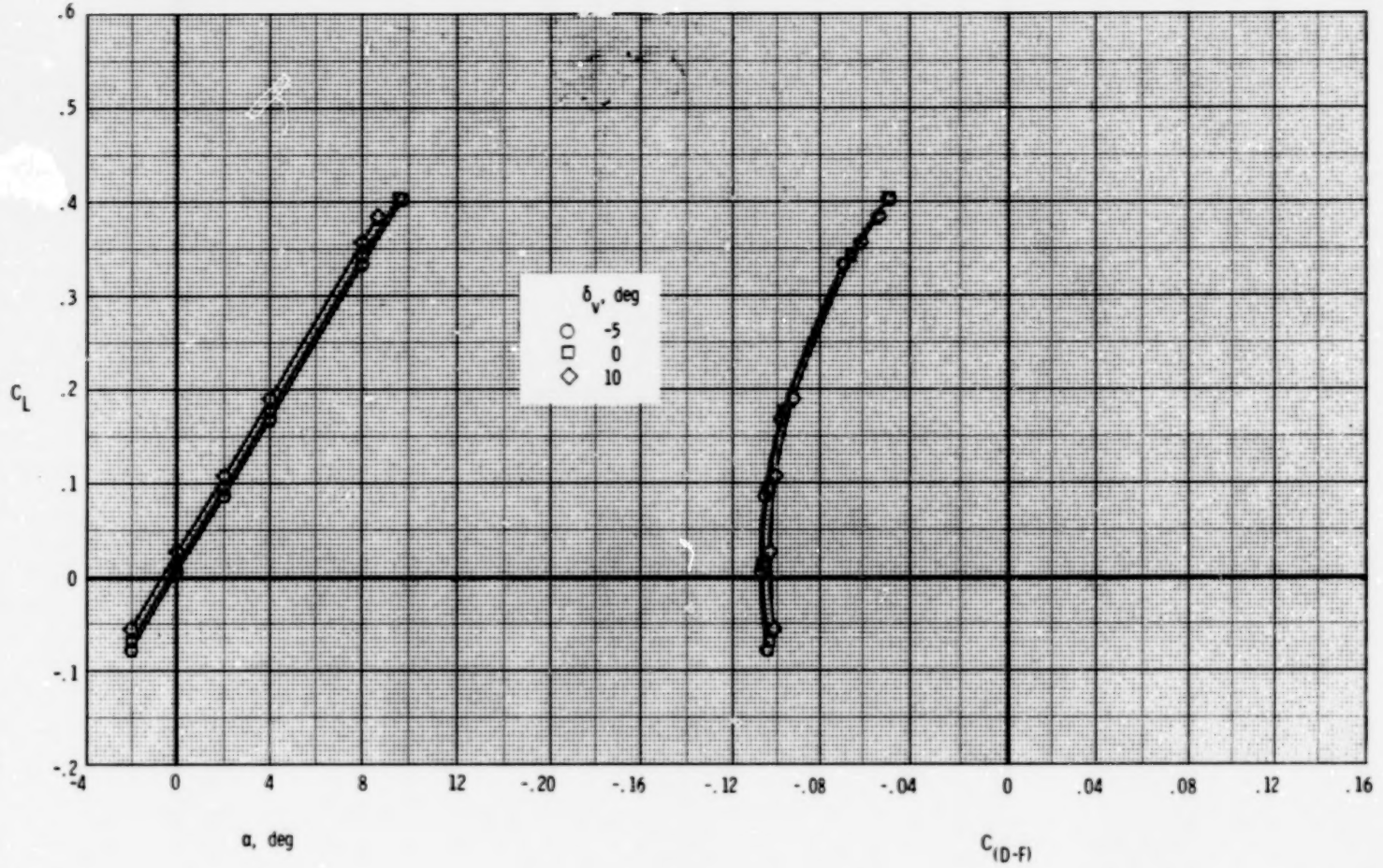
(b) NPR = 3.5; M = 0.90.

Figure 70.- Continued.



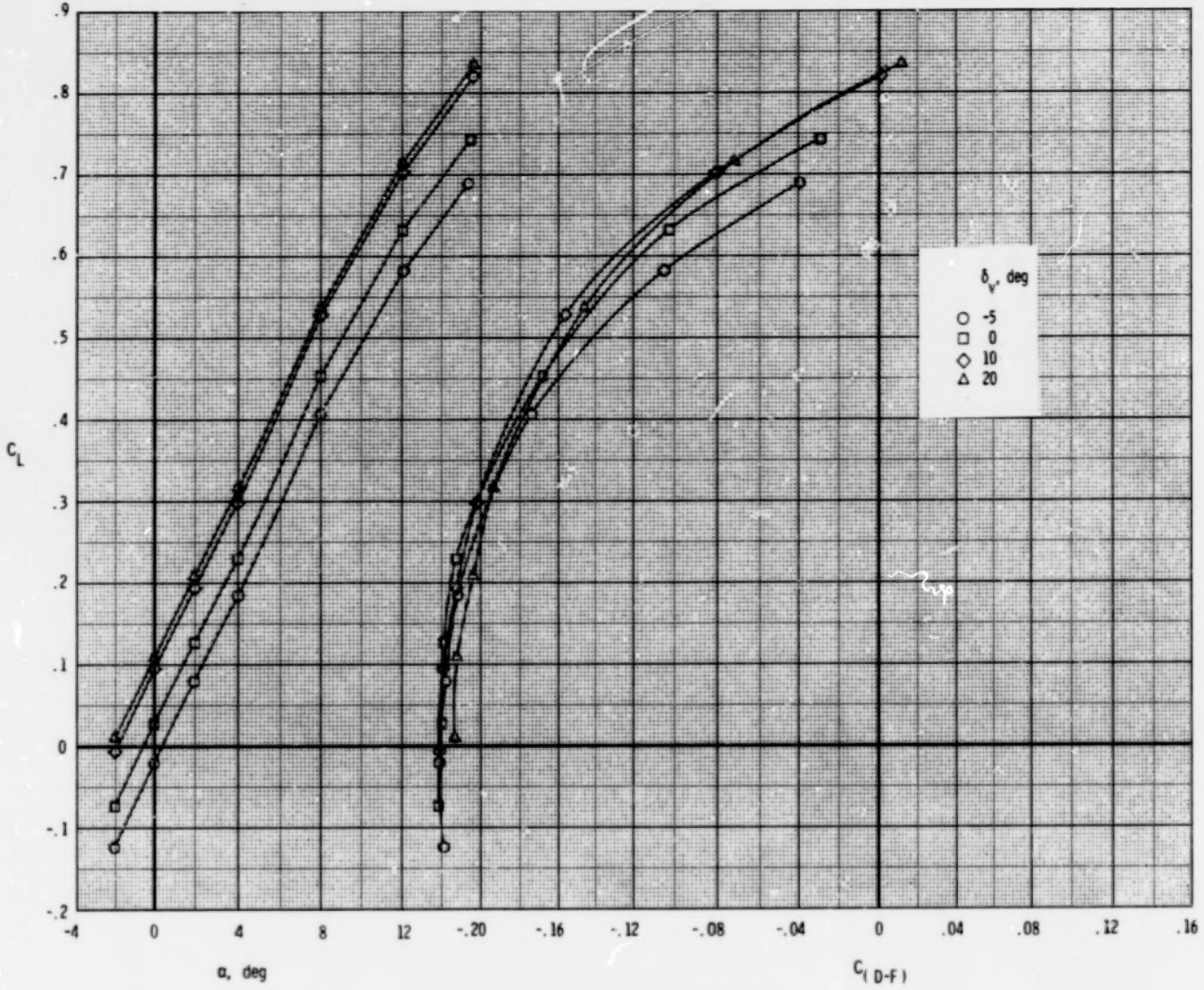
(c) NPR = 5.0; M = 0.90.

Figure 70.- Continued.



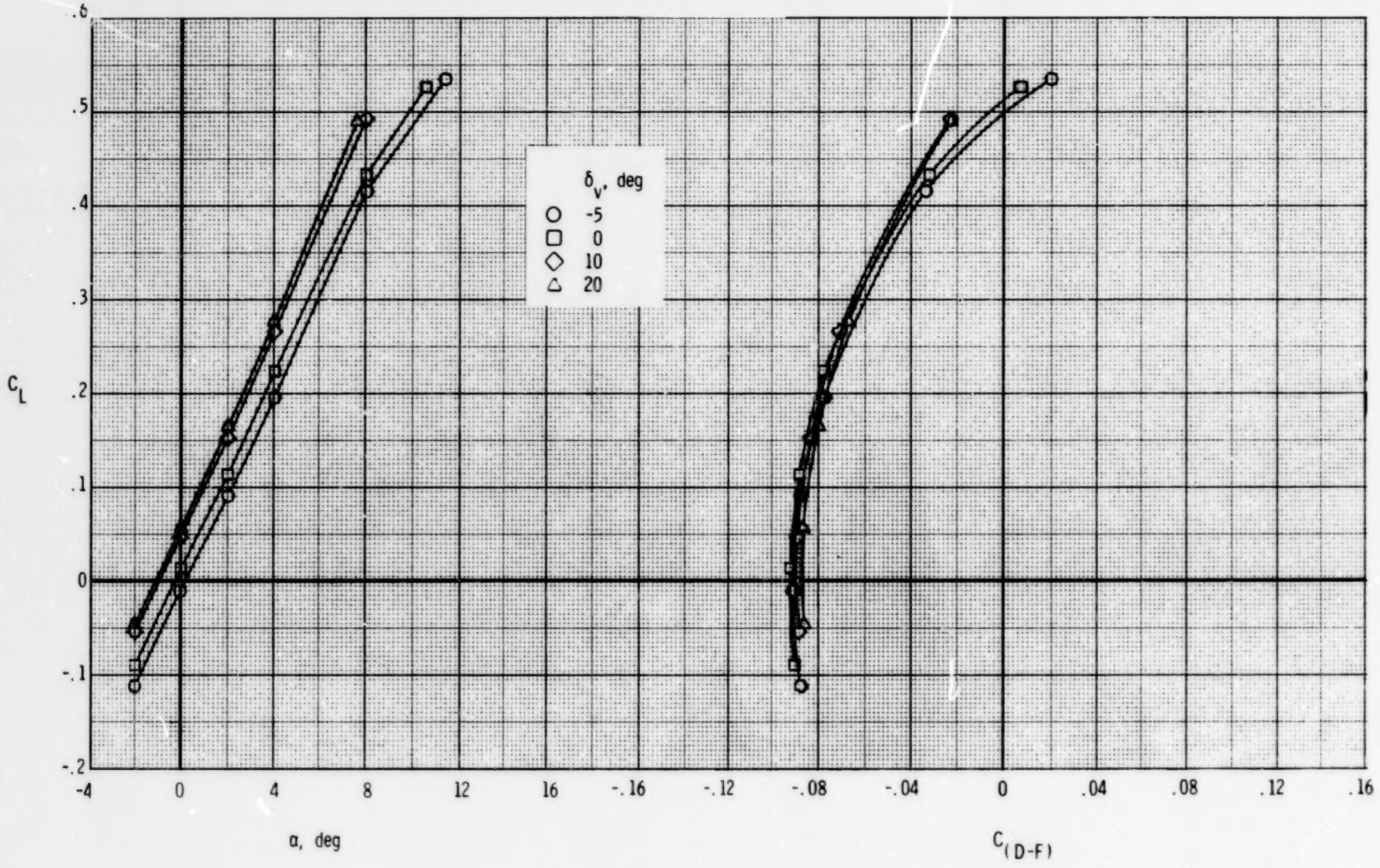
(d) NPR = 7.0; M = 1.20.

Figure 70.- Concluded.



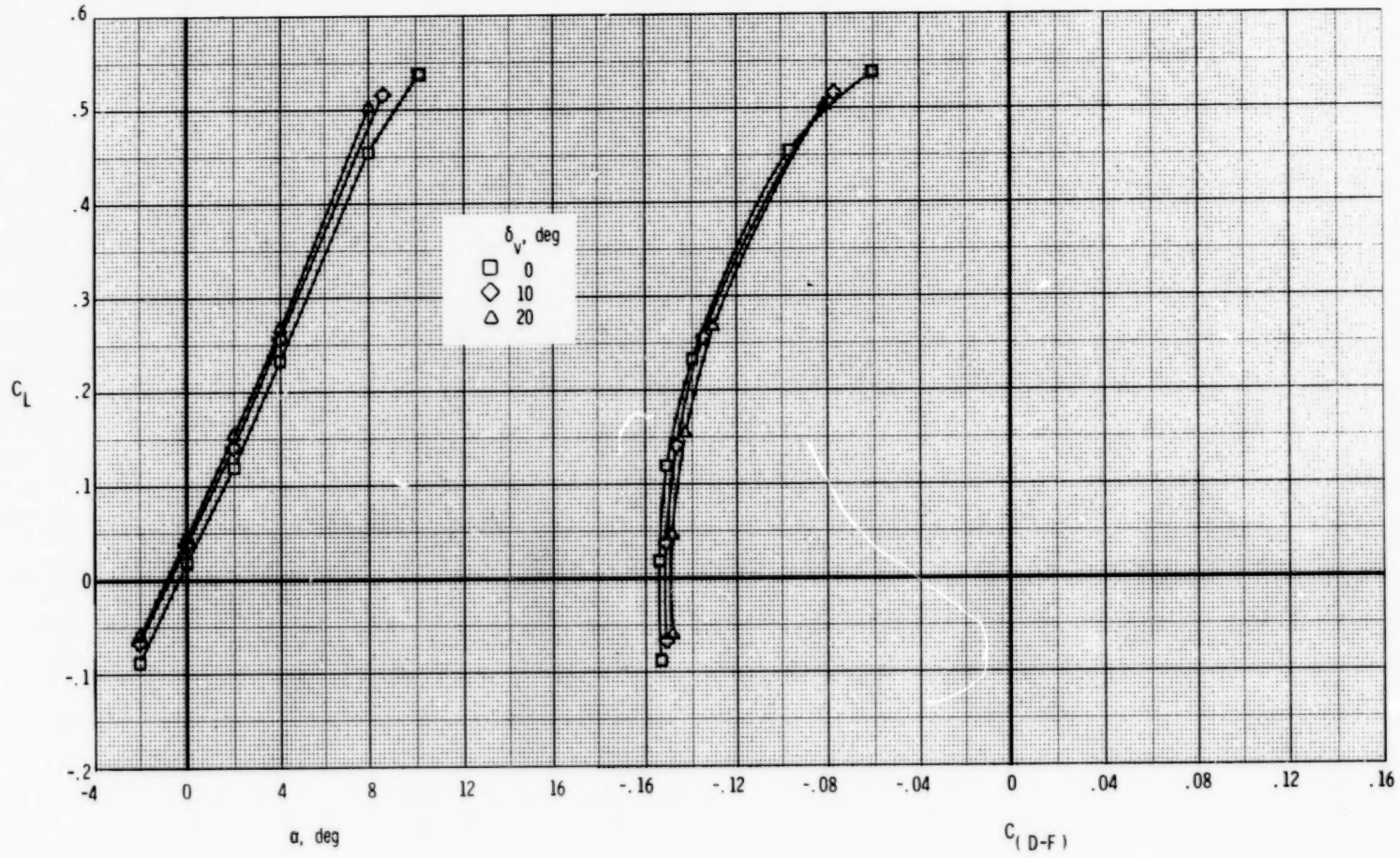
(a) NPR = 3.5; M = 0.60.

Figure 71.- Effect of vector angle on longitudinal aerodynamic characteristics. Aft-swept wing; inverted SERN, A/B power.



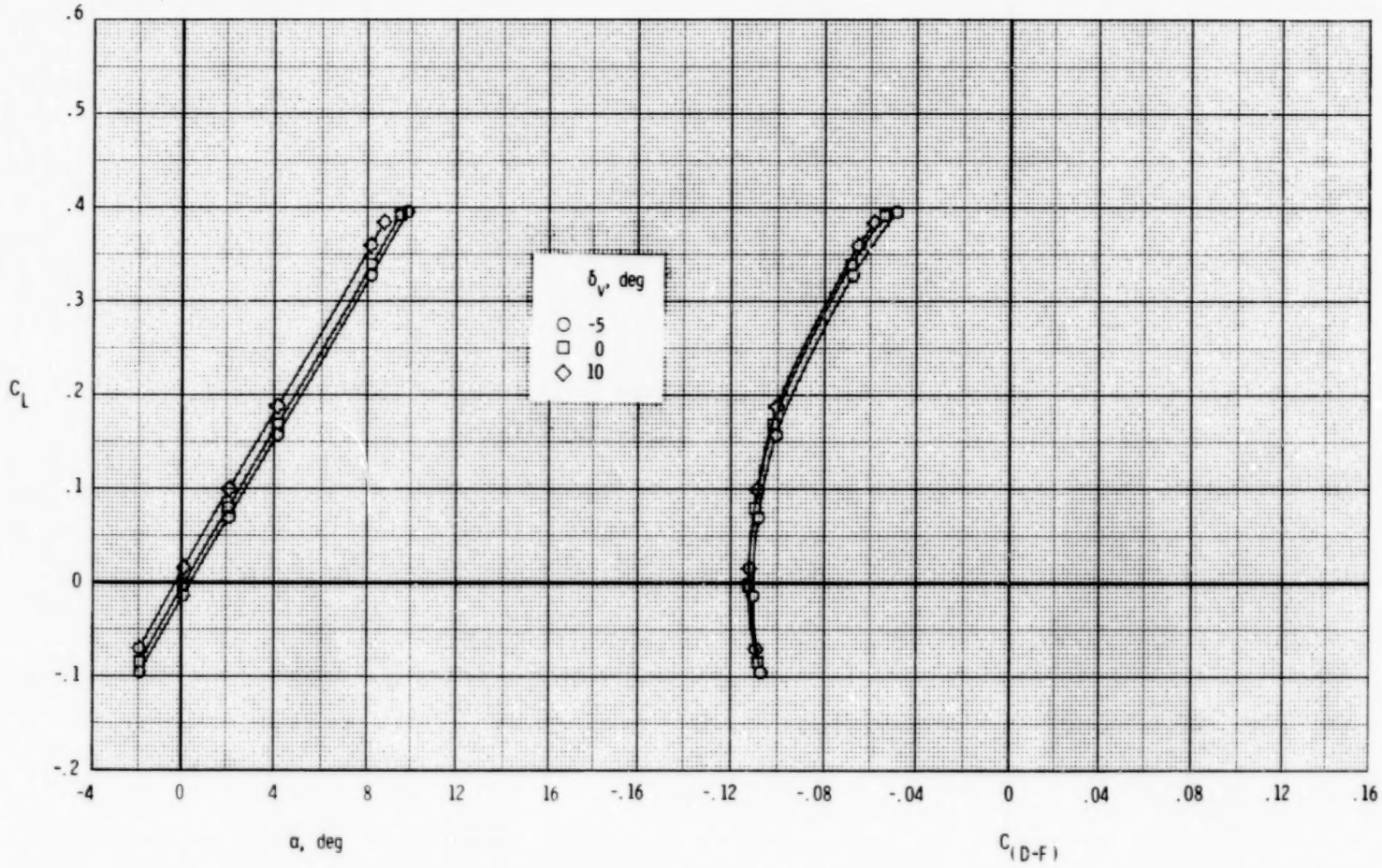
(b) NPR = 3.5; M = 0.90.

Figure 71.- Continued.



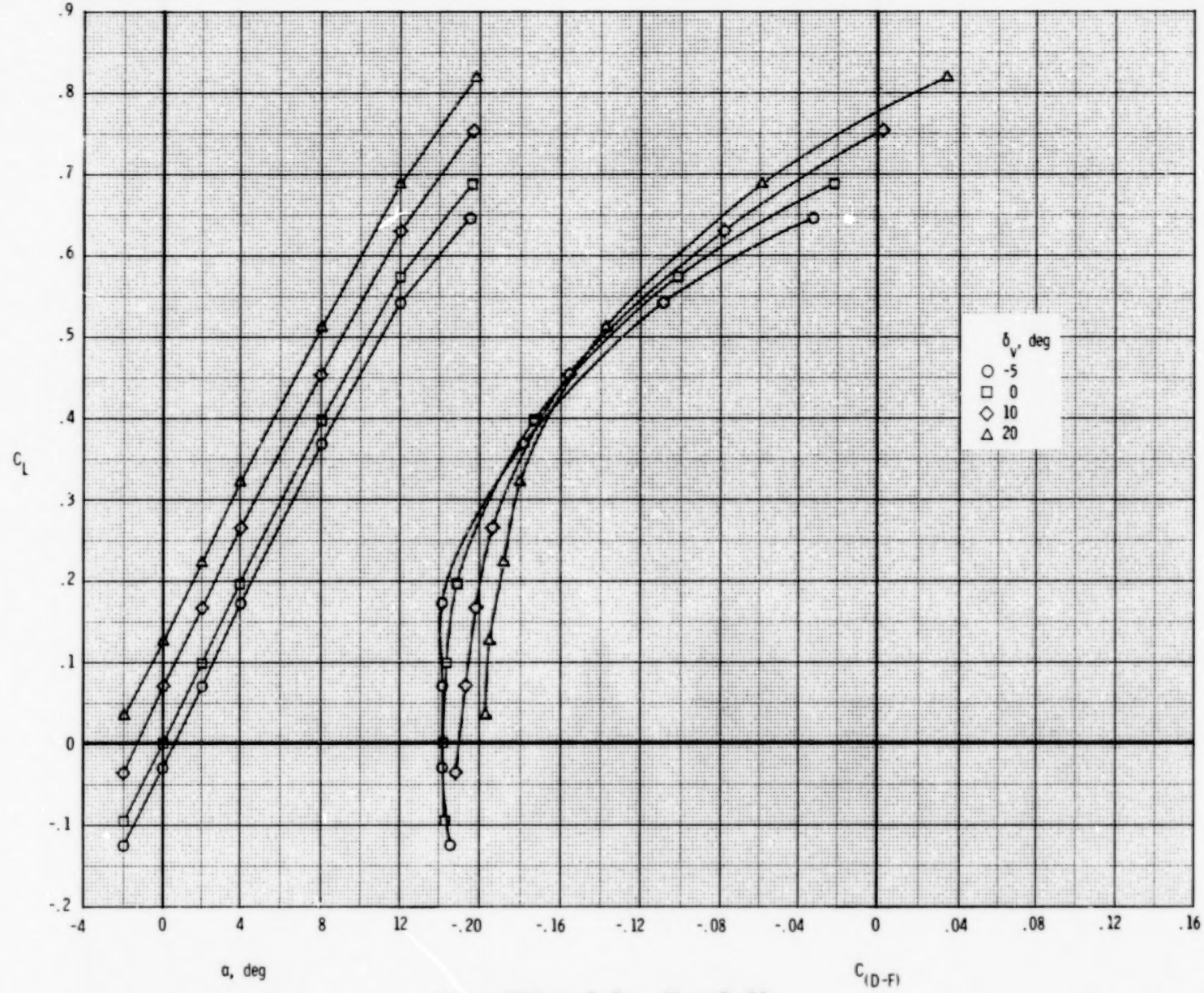
(c) NPR = 5.0; M = 0.90.

Figure 71.- Continued.



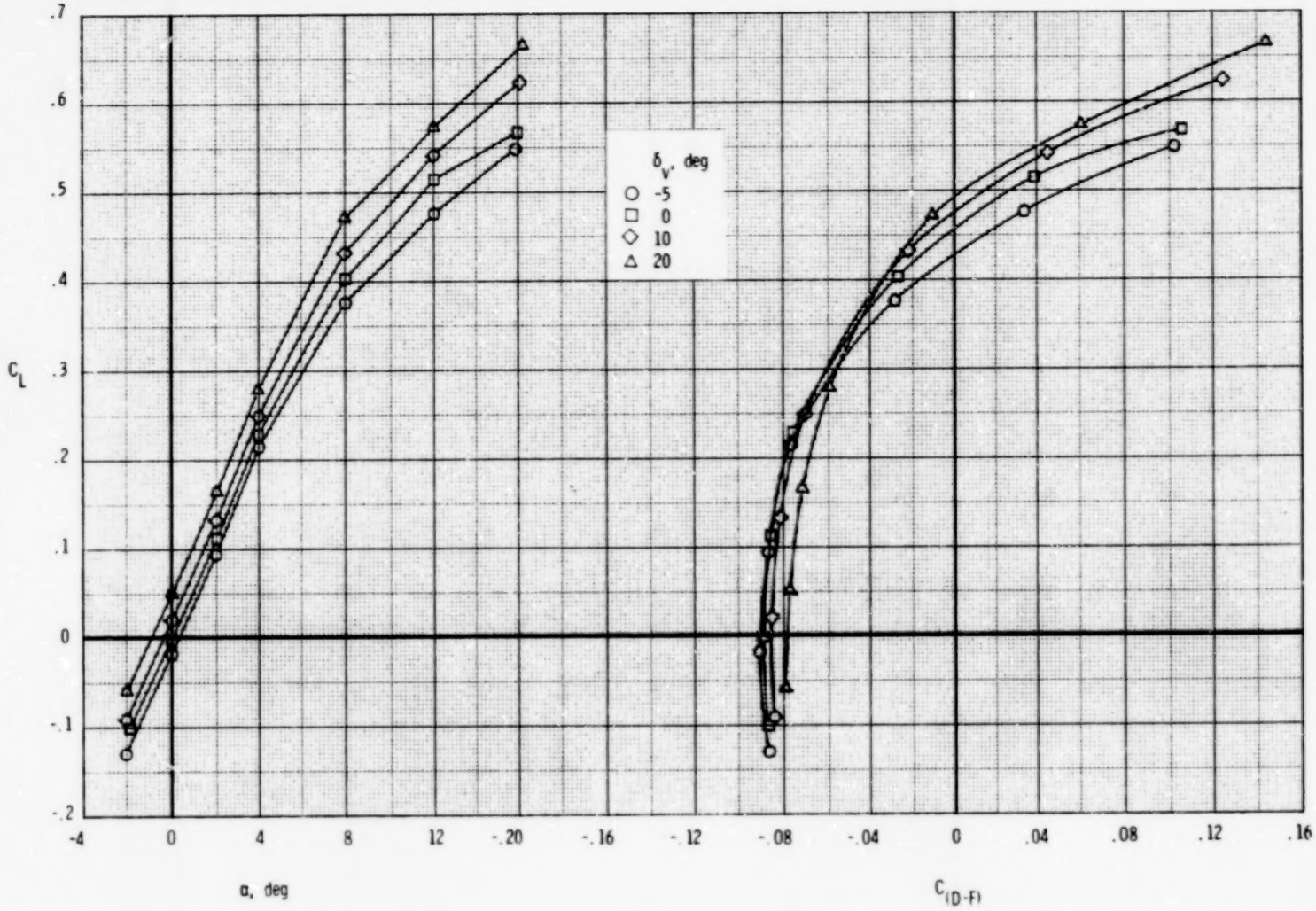
(d) NPR = 7.0; M = 1.20.

Figure 71.- Concluded.



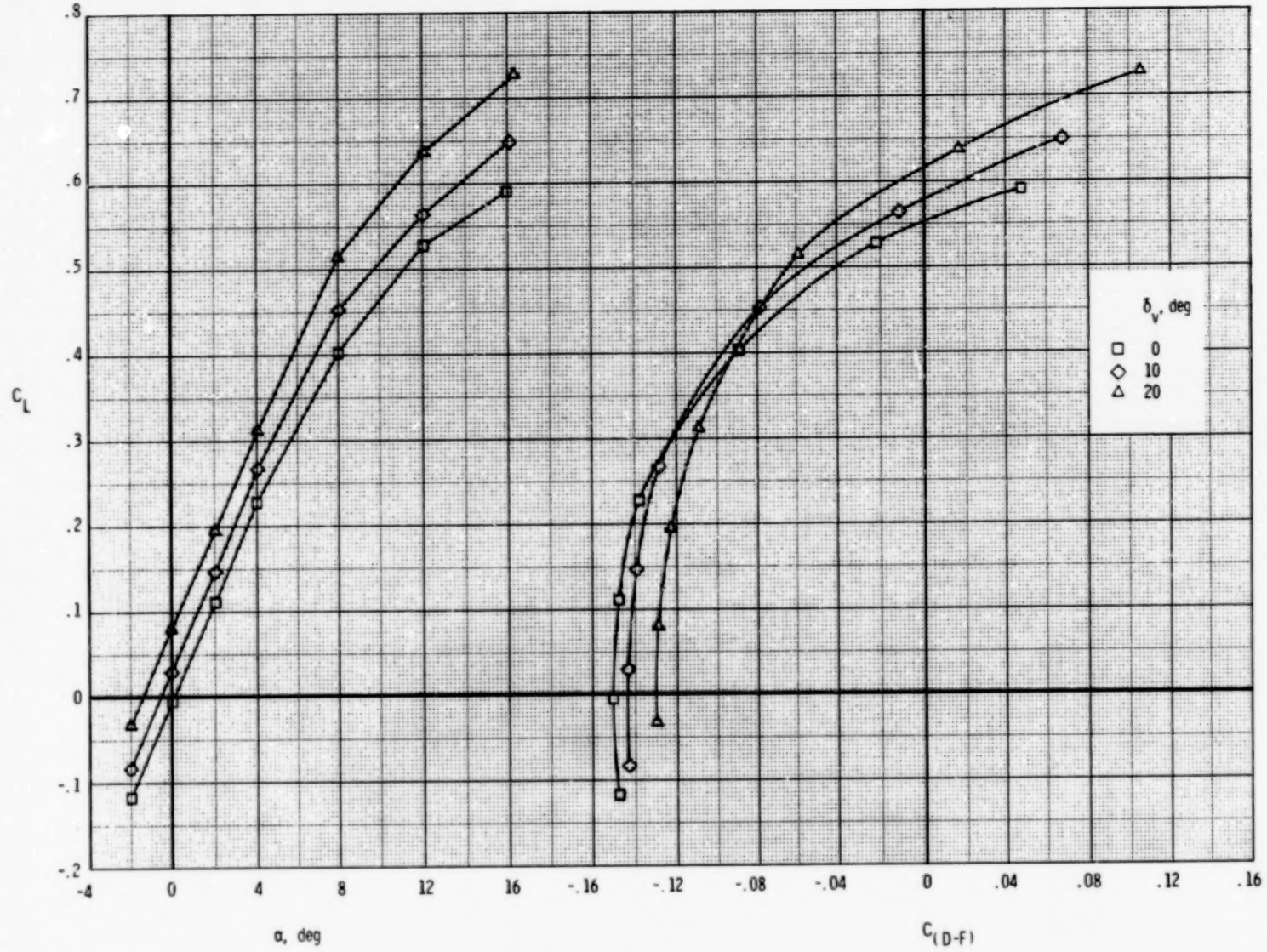
(a) NPR = 3.5; M = 0.60.

Figure 72.- Effect of vector angle on total longitudinal aerodynamic characteristics. Forward-swept wing; upright SERN, A/B power.



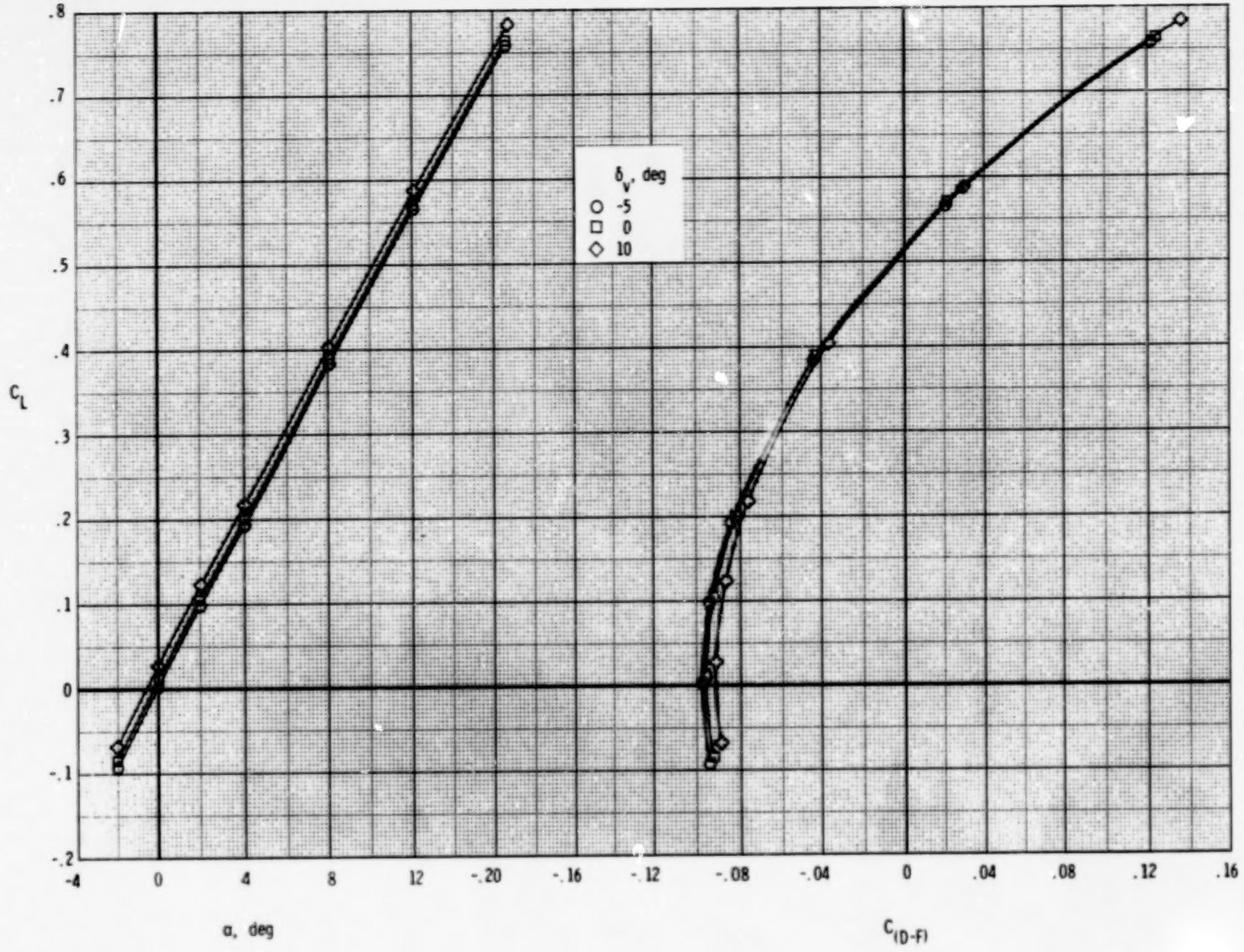
(b) NPR = 3.5; M = 0.90.

Figure 72.- Continued.



(c) NPR = 5.0; M = 0.90.

Figure 72.- Continued.



(d) NPR = 7.0; M = 1.20.

Figure 72.- Concluded.

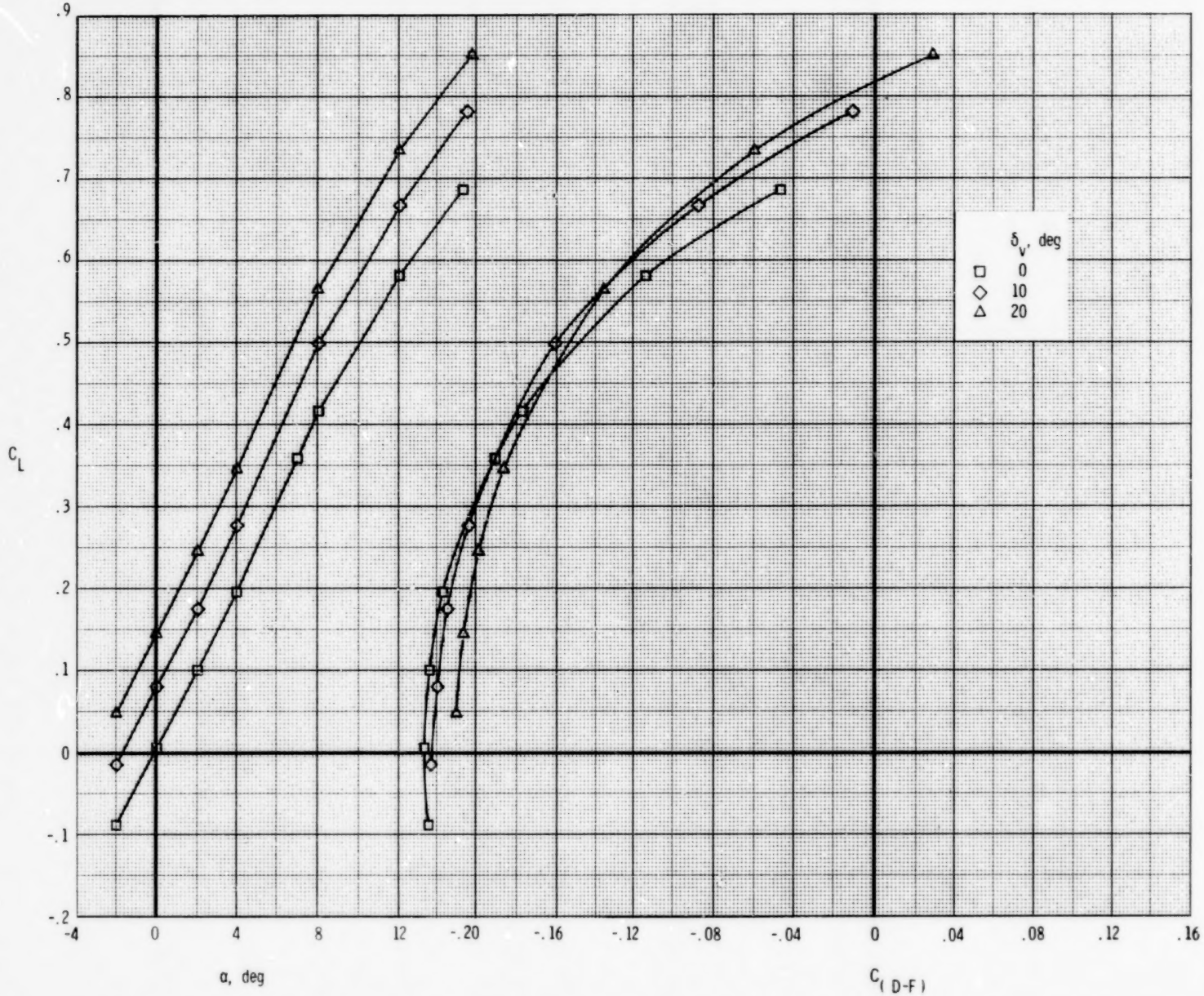


Figure 73.- Effect of vector angle on total aerodynamic characteristics. Aft-swept wing; 2-D C-D nozzle, A/B power; M = 0.60; NPR = 3.5.

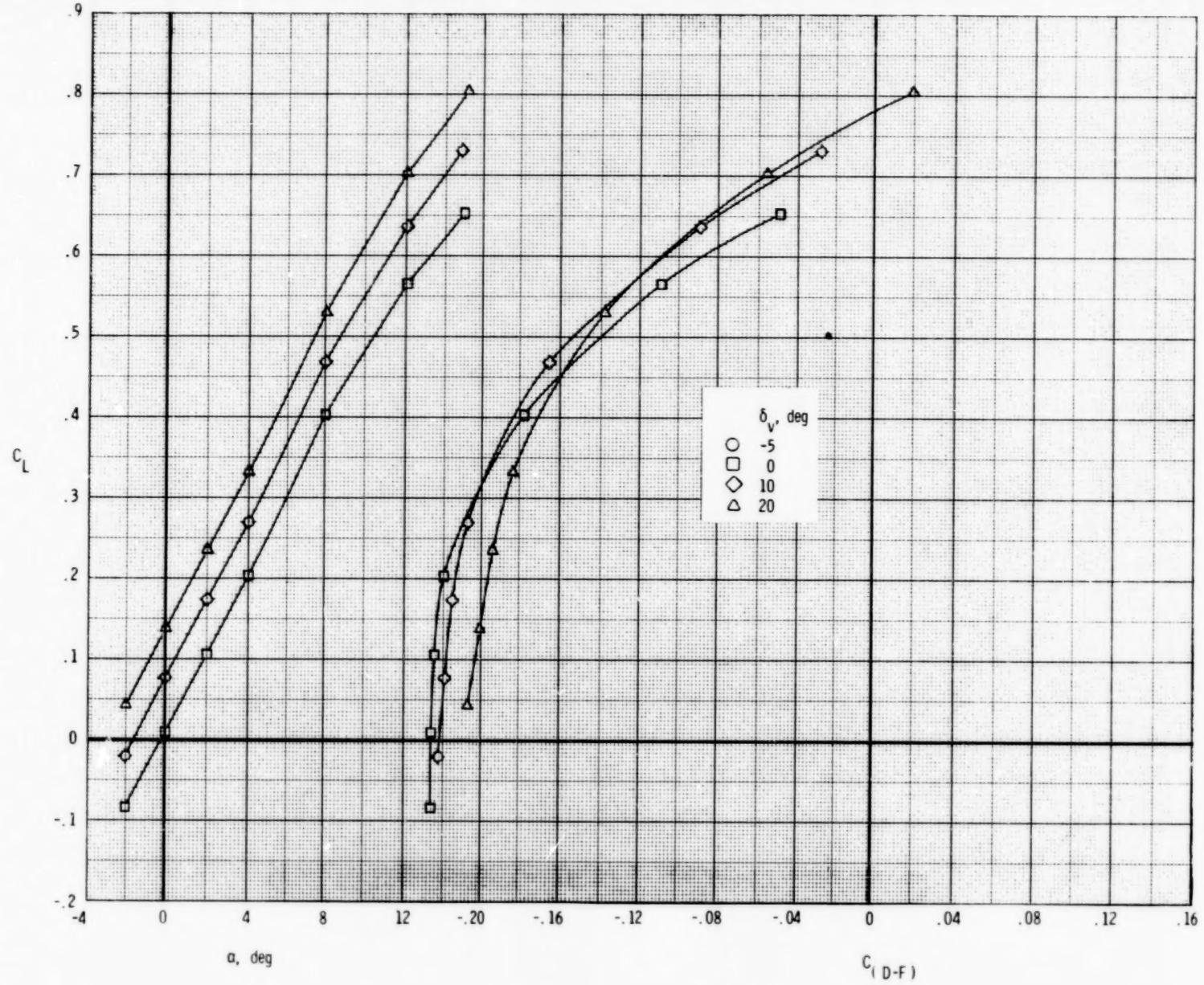


Figure 74.- Effect of vector angle on total aerodynamic characteristics. Forward-swept wing; 2-D C-D nozzle, A/B power; M = 0.60; NPR = 3.5.

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15. Supplementary Notes

16. Abstract

An investigation was conducted in the Langley 16-Foot Transonic Tunnel to determine the aeropropulsive characteristics of a single expansion ramp nozzle (SERN) and a two-dimensional convergent-divergent nozzle (2-D C-D) installed with both an aft-swept and a forward-swept wing. The SERN was tested in both an upright and an inverted position (external ramp on top and bottom, respectively). The effects of thrust vectoring at nozzle vector angles from -5° to 20° were studied. This investigation was conducted at Mach numbers from 0.40 to 1.20 and angles of attack from -2.0° to 16°. Nozzle pressure ratio was varied from 1.0 (jet off) to about 9.0. Reynolds number based on the wing mean geometric chord varied from about 3.0×10^6 to 4.8×10^6, depending upon free-stream Mach number.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
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